CDX-C90

SERVICE MANUAL

US Model
E Model

Model Name Using Similar Mechanism	CDX-C680/C780
CD Drive Mechanism Type	MG-363S-121
Optical Pick-up Name	KSS-520A

SPECIFICATIONS

AUDIO POWER SPECIFICATIONS (US model)
POWER OUTPUT AND TOTAL HARMONIC DISTORTION
19 watts per channel minimum continuous average power into 4 ohms, 4 channels driven from 20 Hz to 20 kHz with no more than 1 % total harmonic distortion.

Other specifications

CD player section

System	Compact disc digital audio system
Signal-to-noise ratio	108 dB
Frequency response	5 - 20,000 Hz (±1 dB)
Wow and flutter	Below measurable limit
Laser Diode Properties	
Material	GaAlAs
Wavelength	780 nm
Emission Duration	Continuous
Laser output power	Less than 44.6 µW*

* *This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block.*

Tuner section

FM

Tuning range	FM tuning interval: 50 kHz/200 kHz switchable 87.5 - 108.0 MHz (at 50 kHz step) 87.5 - 107.9 MHz (at 200 kHz step)
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz
Usable sensitivity	8 dBf
Selectivity	75 dB at 400 kHz 50 dB at 200 kHz
Signal-to-noise ratio	65 dB (stereo), 68 dB (mono)
Harmonic distortion at 1 kHz	
	0.3% (stereo), 0.3% (mono)
Separation	35 dB at 1 kHz
Frequency response	20 - 15,000 Hz (±0.5 dB)

AM

Tuning range	AM tuning interval: 9 kHz/10 kHz switchable 531 - 1,602 kHz (at 9 kHz step) 530 - 1,710 kHz (at 10 kHz step)
Antenna terminal	External antenna connector
Intermediate frequency	10.71 MHz/450 kHz
Sensitivity	30 dBµV

General

Outputs	Digital output Line outputs (3) Power antenna relay control lead Power amplifier control lead Telephone ATT control lead Illumination control lead
Tone controls	Bass ±8 dB at 100 Hz Treble ±8 dB at 10 kHz
Power requirements	12 V DC car battery (negative ground)

– Continued on next page –

FM/AM COMPACT DISC PLAYER

MICROFILM

SONY®

Dimensions	Approx. 178 × 50 × 184 mm (7 1/8 × 2 × 7 1/4 in.) (w/h/d)
Mounting dimension	Approx. 182 × 53 × 163 mm (7 1/4 × 2 1/8 × 6 1/2 in.) (w/h/d)
Mass	Approx. 1.6 kg (3 lb. 8 oz.)
Supplied accessories	Parts for installation and connections (1 set) Rotary remote RM-X90 (1) Wireless remote RM-X9 (1) Front panel case (1)

Design and specifications are subject to change without notice.

SERVICE NOTE

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Notes on Chip Component Replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

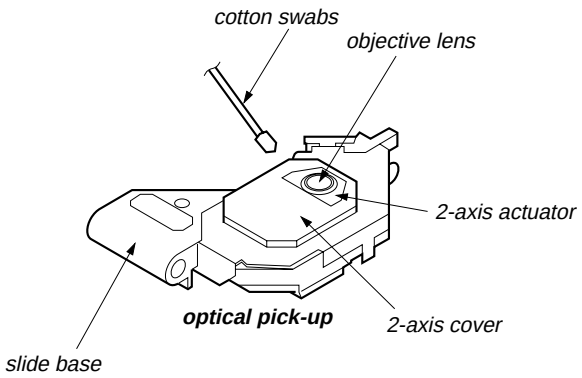
NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

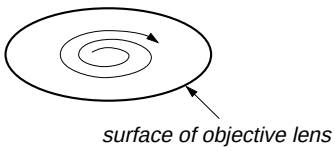
NOTES ON PICK-UP FLEXIBLE BOARD

The pick-up flexible board in this set is secured to the optical pick-up with an adhesive tape. Once the tape is removed, an adhering force becomes weak, and it cannot be reused.
Therefore, if the optical pick-up is replaced, replace also the pick-up flexible board with a new one.

NOTES ON CLEANING THE OBJECTIVE LENS



Apply CD lens cleaner B-4 (Part No.:J-2501-000-A) to cotton swabs (narrow type) (Part No.:J-2501-023-A) to be lightly wet. Use a force (about 5 g (0.18 oz)) to make the objective lens in contact with the bottom lightly, and clean the lens by spirals as following below.
Replace the cotton swab and repeat this cleaning two or three times.



Notes:
Do not force to push the objective lens. Otherwise, the plate spring supporting the objective lens will be bent, causing a deteriorated RF waveform.
Never touch anything other than the objective lens. Otherwise, a significant deterioration occurs in the RF waveform.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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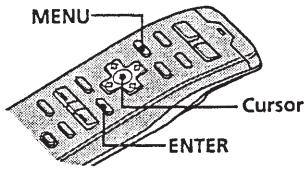
Initial settings

Do the following initial settings before you operate the unit for the first time, after replacing the car battery, or after resetting the unit.
Be sure to make these settings, otherwise the front panel is disabled and you will be unable to insert a CD.

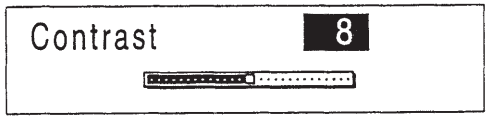


Tip
You can reset all of these initial settings (except the ACC position setting) using the set up menu.

Note
You can specify the ACC position settings only in the initial setting procedure. To change these settings afterwards, press the reset button and repeat the procedure.

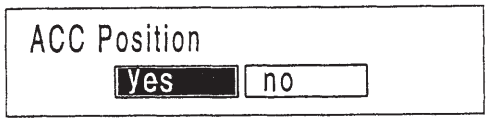
1 Press the reset button behind the front panel (see page 2).
The Contrast indication appears.

Press ← or → to adjust the contrast. The contrast is adjustable to 15 levels.



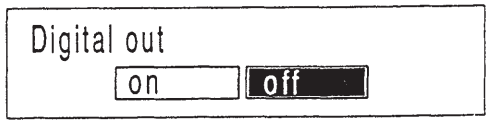
2 Press ENTER.
The ACC Position indication appears.

Press ← or → to select "yes" or "no." Select "yes" if your car's ignition switch has an ACC position; select "no" if your car's ignition switch has no ACC position.



3 Press ENTER.
The Digital out indication appears.

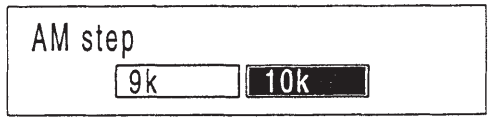
Press ← or → to select "on" or "off" depending on your car audio system. Select "on" when an optional equipment with digital input is connected to the unit.



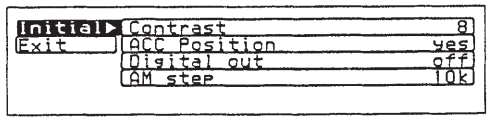
Tip
You can also complete the initial settings by pressing ↑ or ↓ to select "Exit," then press MENU.

4 Press ENTER.
The AM step indication appears.

Press ← or → to select "10k" or "9k."
Select "10k" if you're using your system in North or South America, the Hawaiian Islands, or Guam; select "9k" for all other countries.



5 Press ENTER.
The Initial setting menu appears.



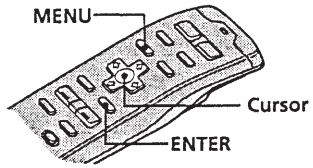
To change any of the initial settings at this time, press the cursor buttons to select the item you want to change and press ENTER.

6 To complete the initial settings, press MENU.

This section is extracted from instruction manual.

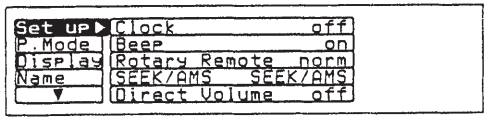
Setting the clock

Set the clock with the wireless remote.
Turn the unit on before setting the clock.
The clock uses a 12-hour digital indication.

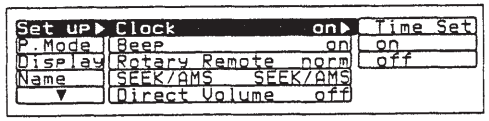


Note
If the ACC position is set to "no", turn the power on first, then set the clock.

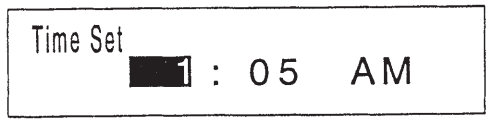
1 **Press MENU.**
The menu display appears.



2 **Select "Set up" and press ➡ to move to the sub menu, then select "Clock" pressing ↑ or ↓.**



3 **Press ➡ then ↑ or ↓ to select "Time Set," then press ENTER.**
The Time Set indication appears.



❶ Press ↑ or ↓ to set the hour.

❷ Press ➡ to move to minutes and press ↑ or ↓ to set the minutes.

Pressing ↓ lowers the number and ↑ raises the number.

The "AM" and "PM" indicators are automatically switched depending on the set hour.

Tip
You can press ENTER or BACK instead of MENU to set a value.

4 **After setting the time, press MENU.**
The time is stored and the menu display reappears.

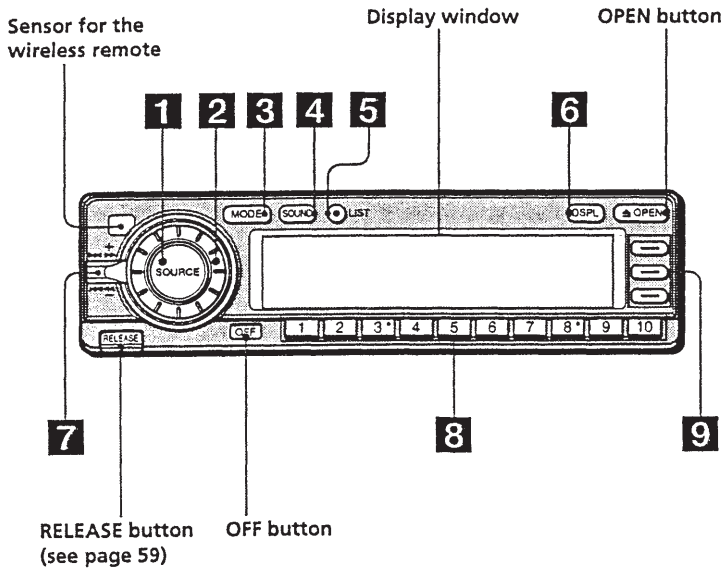
To display the current time during operation

The current time can be set to appear in the upper-left corner of the display (except when a menu is displayed). For details, see "Setting the set up menu" on page 44.

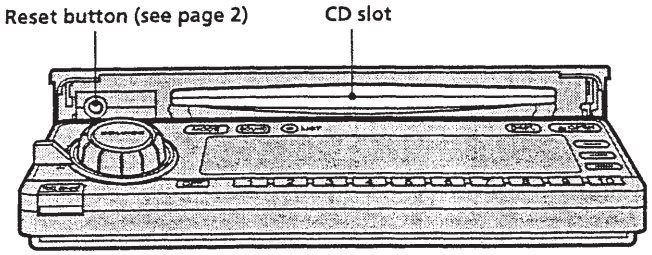
EN

Using the main panel controls

You can use the main panel controls for all operations except menu operations.



When the front panel is open



1 SOURCE (source select) button

Each time you press the button, the source switches as follows:

→ Tuner → CD → MD* →

*Only when an optional unit is connected

2 Dial (volume/subwoofer volume/bass/treble/left-right/rear-front control)

Rotate to adjust the volume or sound characteristics.

3 MODE (band/unit select) button

Each time you press the button, the band or unit switches as follows:

When the tuner is selected

→ FM1 → FM2 → AM →

When CD/MD is selected

→ CD/MD1 → CD/MD2 → CD/MD3... →

4 SOUND button

Press to switch to the sound characteristics adjustment mode (see page 43).

When an optional DSP (digital signal processor) is connected, press and hold for two seconds to switch to the DSP Sound Tuning Mode (see page 49). To return to the previous mode, press and hold the button again.

5 LIST button

When CD or MD is selected, press to display the disc name list. While the list appears in the display, press again to display the track name list of the current disc (see page 29).

When FM1, FM2, or AM is selected, press to display the preset name list (see page 42).

To change the current selection, use the cursor buttons to select another disc, track, or station, then press ENTER.

6 DSPL (display mode change) button

When playing a CD or MD, press to display the disc title or track title. When the current disc or track has no title, "NO Disc Name (NO Track Name)" appears in the display.

Press and hold for two seconds to switch to the function menu which appears, depending on the current source or setting mode (see "9 Function buttons"). To return to the previous function menu, press and hold the button again.

7 SEEK/AMS (seek/Automatic Music Sensor/manual search) control

Push the control up or down to locate a track or receive a station.

Push the control up or down and hold until the desired station or track is located.

8 Number buttons

Press to search for the preset stations, or to switch to the desired disc in the CD/MD unit which corresponds to the number button.

9 Function buttons

Press to switch the mode setting manually. The function menu which appears depends on the current source.

Each time you press DSPL for two seconds, the function menu switches as follows:

When the tuner is selected

BTM
MONO ↔ DVOL
LCL EL

When CD/MD is selected

REP VC*
SHUF ↔ DVOL
PGM EL

When labeling a CD or station

RIGH VC*
ENT ↔ DVOL
LEFT EL

When Edit mode is selected

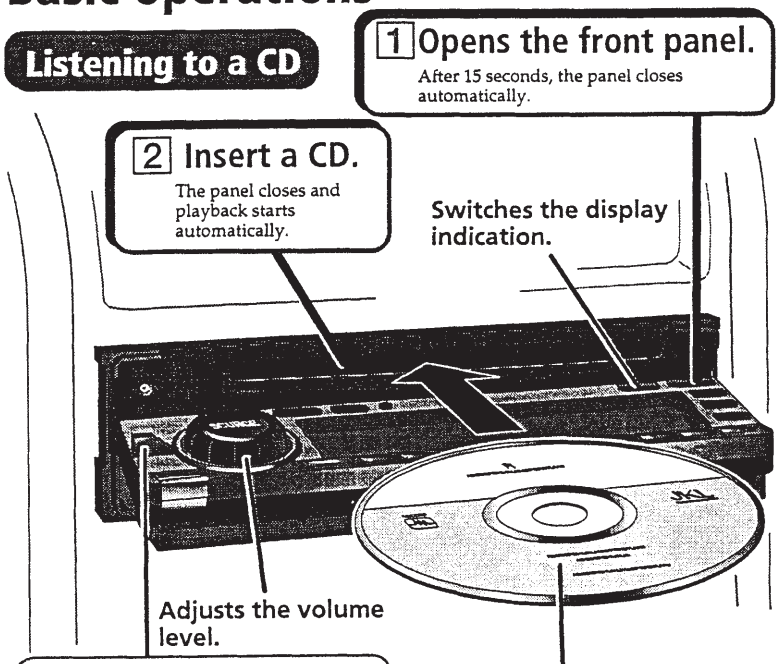
UP VC*
ENT ↔ DVOL
DOWN EL

* Only when the CD player of the unit (CD1) is selected.

EN

Basic operations

Listening to a CD


1 Opens the front panel.
After 15 seconds, the panel closes automatically.
2 Insert a CD.
The panel closes and playback starts automatically.
Switches the display indication.
Adjusts the volume level.
Labeled side up

To locate a specific point in a track (Manual searching)

Push the SEEK/AMS control up or down and hold.

To search forward

To search backward

Release the control when you have found the desired point.

To locate a specific track (Automatic music sensor (AMS))

Push the SEEK/AMS control up or down momentarily.

To locate a succeeding track

To locate a preceding track or the beginning point of the current track

When a CD is already inserted

Press SOURCE repeatedly until "CD" appears, playback starts automatically.

To stop playback

Press OFF.

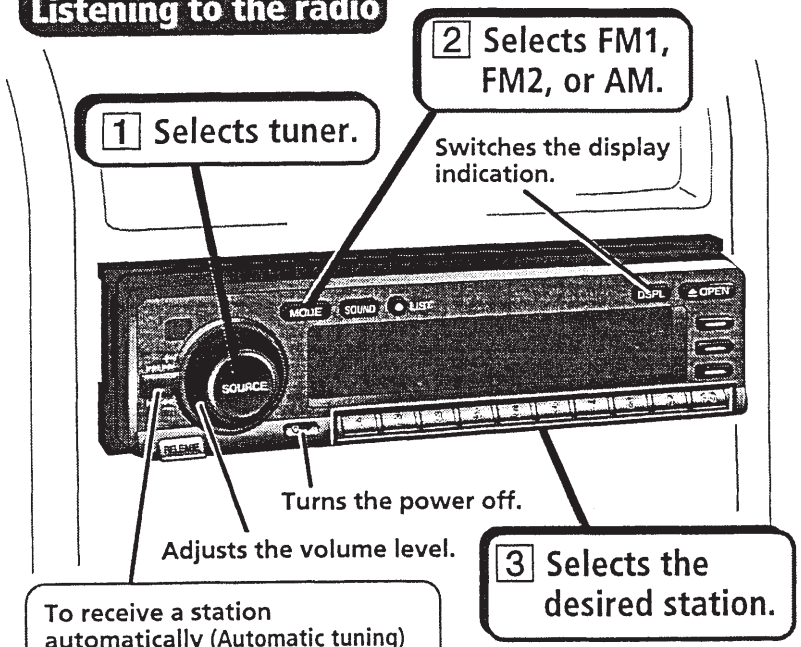
To eject the CD

Press OPEN, the CD is automatically ejected.

Note

To play back an 8 cm (3 in.) CD, use the optional Sony compact disc single adapter (CSA-8).

Listening to the radio


2 Selects FM1, FM2, or AM.
1 Selects tuner.
Switches the display indication.
Turns the power off.
Adjusts the volume level.
3 Selects the desired station.

To receive a station automatically (Automatic tuning)

Push the SEEK/AMS control up or down momentarily.

To search for succeeding stations

To search for preceding stations

Scanning stops when the unit receives a station.

To receive the desired frequency (Manual tuning)

Push the SEEK/AMS control up or down and hold until the desired frequency is received.

To search for a higher frequency

To search for a lower frequency

You can select the buttons only when a memorized station is assigned to the number button (see page 34).

To switch the band

Press MODE repeatedly to select the desired band.

To stop listening to the radio

Press OFF.

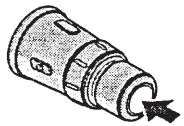
Using the rotary remote

You can use the rotary remote for all operations except menu operations.

Basic operations

By pressing buttons

SOURCE button



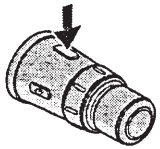
Each time you press SOURCE, the source changes as follows:

TUNER → CD → MD*

* When an MD unit is connected.

EN

MODE button

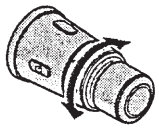


Pressing MODE changes the operation as follows:

- Tuner: FM1 → FM2 → AM
- CD unit: CD1 → CD2 → ...
- MD unit: MD1 → MD2 → ...

By rotating the control

SEEK/AMS control



Rotate the control momentarily and release it to:

- Locate the beginning of tracks when CD or MD is selected.
- Automatically tune in a station when FM1, FM2, or AM is selected. When a station is detected, the unit stops searching.

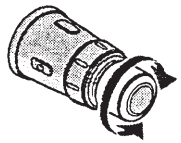
Keep the control rotated to:

- Locate a specific point on a track when CD or MD is selected. Playback at normal speed resumes when you release the control.
- Manually tune in a station when FM1, FM2, or AM is selected. Release the control when the desired station is located.

Tip

If the SEEK/AMS mode is set to "Item sel," you can select the desired station or disc with SEEK/AMS when the list appears in the display (see page 45).

VOL control

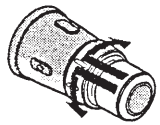


Rotate the control to:

Adjust the volume level.

By pushing in and rotating the control

DISC/PRESET control



Push in and rotate the control to:

- Receive the stations memorized on the number buttons when FM1, FM2 or AM is selected.
- Change the disc when CD or MD is selected.

Push in and release the control to:

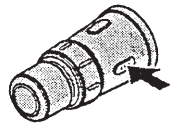
Display the list of discs (when CD or MD is selected) or preset stations (when FM1, FM2, or AM is selected) for a few seconds. The previous display will reappear after a moment.

EN

Getting started

Other operations

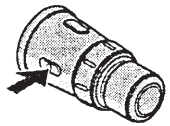
OFF button



Press this button to turn off the unit.

To turn on the unit again, press SOURCE.

ATT button



Press this button to attenuate the sound.

To cancel the attenuation (ATT), press the button again.

Changing the operative direction

If you need to mount the rotary remote on the left side of the steering column, you can reverse the operative direction. See "Setting the set up menu" on page 44.

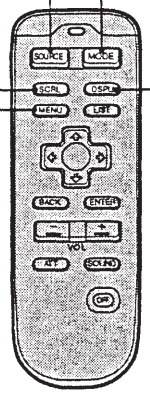
Using the wireless remote

Use the wireless remote to make the various menu settings. For your safety, unit operations with the wireless remote should be done by a passenger. If you (the driver) want to use the wireless remote, park your car in a safe location first before performing any operations.

SOURCE (Source select) button
Each time you press the button, the source switches as follows:
→Tuner → CD → MD* →

* Only when an optional unit is connected

MODE (band/unit select) button
Each time you press the button, the band or unit switches as follows:
When the tuner is selected
→ FM1 → FM2 → AM →
When CD/MD is selected
→ CD/MD1 → CD/MD2 → CD/MD3... →



SCRL button
Press to scroll the track or disc title when playing a CD TEXT disc or an MD.

MENU button
Press to switch to a menu display. The menu which appears depends on the current program source. To return to the previous display, press the button again.

DSPL (display mode change) button
When playing a CD or MD, press to display the disc title or track title.
When the current disc or track has no title, "NO Disc Name (NO Track Name) " appears in the display.
Press and hold for two seconds to switch to the function menu which appears, depending on the current source or setting mode (see "9 Function buttons" page 9).
To return to the previous function menu, press and hold the button again.

When the ACC position is set to "no," the unit cannot be operated with the wireless remote unless SOURCE on the rotary remote or front panel is pressed, or a CD is inserted to activate the unit first.

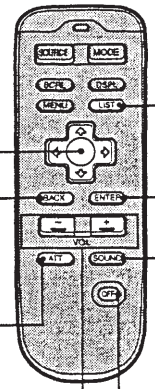
Cursor buttons
While the menu display appears, press to move the cursor within a menu display.
When CD or MD is selected, press ↑ or ↓ to change the disc and ← and → to locate a track.
When FM1, FM2, or AM is selected, press ↑ or ↓ to select a preset station, or ← and → to perform automatic tuning.

BACK button
Press to return to the normal display during a menu operation.

ATT button
Press to attenuate the volume. To return to the previous volume level, press the button again.

VOL +/– buttons
Press + or – to adjust the volume or sound characteristics.

OFF button
Press to turn off the unit.



LIST button
When CD or MD is selected, press to display the disc name list. While the list appears in the display, press again to display the track name list of the current disc (see page 29).
When FM1, FM2, or AM is selected, press to display the preset name list (see page 42).
To change the current selection, use the cursor buttons to select another disc, track, or station, then press ENTER.

ENTER button
Press to carry out the selected function.

SOUND button
Press to adjust the sound characteristics (see page 43).
When an optional DSP (digital signal processor) is connected, press and hold for more than two seconds to switch to the DSP Sound Tuning Mode (see page 49).
To return to the previous mode, press and hold the button again.

EN

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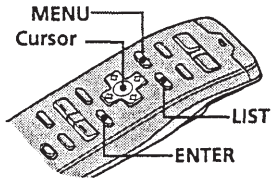
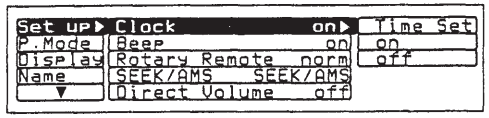
Menu display/Lists

The following menu and lists appear in the display when you press MENU or LIST.



Menu display (appears when you press MENU)



❶ Press MENU to make various settings and adjustments.
❷ Press the cursor buttons to select the item and its setting, then press ENTER.
❸ Press MENU to cancel the menu mode and return to normal display.

Lists (appears when you press LIST)

Press LIST to display the disc name list or track name list when CD or MD is selected.
The preset name list will appear when FM1, FM2, or AM is selected.

To select the disc or station by name

When the disc name list or preset name list appears in the display, press the cursor buttons to select the disc or radio station you want to listen to, then press ENTER.

To return to the previous display without changing the setting, press LIST again.

Tip
If the SEEK/AMS mode is set to "Item sel," you can select the desired station or disc with SEEK/AMS when the list appears in the display (see page 45).

EN

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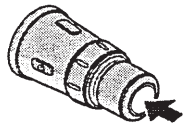
CD/MD

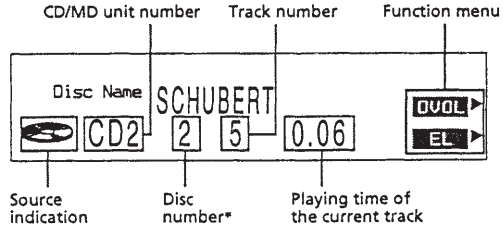
Listening to a CD/MD

If an optional CD or MD unit is connected to this unit, you can locate and listen to discs in the optional CD or MD unit in the same way as you can with those in this unit.

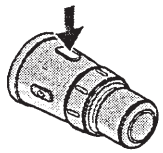


To select the desired CD or MD unit

1 Press SOURCE repeatedly to select "CD" or "MD."



* The disc number appears when the CD/MD unit is connected.



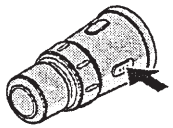
2 Press MODE repeatedly to select the desired CD or MD unit.

When optional CD units are connected
CD1(CDX-C90) → CD2(optional CD unit 1) → CD3(optional CD unit 2)

When optional MD units are connected
MD1(optional MD unit 1) → MD2(optional MD unit 2)

3 Rotate VOL to adjust the volume level.
The volume is adjustable between 0 dB to – ∞ dB.

Caution
For your safety, set the volume low enough so that you can hear the sound in the street around you.



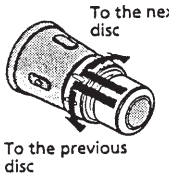
To stop play back

Press OFF.

continue to next page →

EN

Getting Started/CD/MD



To select the disc to be played

Push in and rotate DISC/PRESET.

The unit changes to the next or previous disc. If you keep the control rotated, the discs will continue to change.

Push in and release the control to display the disc name list.

Disc		
CD2	1.MY BEST	6.EURO BEAT
SONYPOPS	* 2.POPS HIT	7.DRIVING
8 3	3.FUSION	8.SONYPOPS
1.28	4.JAZZ	9.SUNSET.M
	5.GREAT HIT	10.HIGHWAY

For details on naming a disc, see "Labeling a CD" on page 25.

Tips

- You can also use the number buttons on the front panel that correspond to the desired disc number.
- If the SEEK/AMS mode is set to "Item sel," you can select the desired disc with SEEK/AMS when the list appears in the display (see page 45).

To locate a track

Rotate, then release SEEK/AMS.

The unit locates the beginning of the current track or the next or previous track.

To locate a specific point on a track

Rotate and hold SEEK/AMS.

The unit plays the track at high speed. When you reach the point you want, release the control.

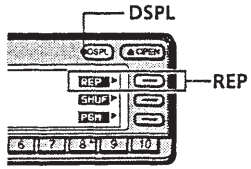
EN

– 11 –

Playing tracks repeatedly

(Repeat play)

The repeat play function allows you to play back a track, a disc, or all the discs in this unit or any connected CD/MD unit repeatedly.



1 While playing a CD or an MD, press and hold DSPL for two seconds.

Tip

If the Select mode in the Func. menu is set to "Source," the function menu automatically appears on the right side of the display, depending on the source you select. (see page 48)

2 Press REP repeatedly to select the mode.

Each time you press REP, the mode changes as follows:

Repeat 1 → Repeat 2 → Repeat 3 → off → Repeat 1

Indication	Operation
1:track	Repeats the current track only.
2:disc	Repeats all tracks on the current disc.
3:changer	Repeats all the discs in the current CD/MD unit (in case one or more optional CD/MD units are connected).
off	Normal playback.

Selecting the mode with the wireless remote

While playing a CD or an MD, press MENU and set the Repeat mode to "1,""2," or "3."

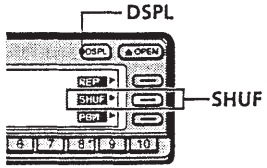
EN

CD/MD

Playing tracks in random order

(Shuffle Play)

Shuffle Play plays back all tracks on the current disc or all discs in this unit or any connected CD/MD unit in random order.

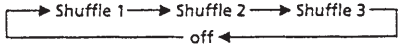


1 While playing a CD or an MD, press and hold DSPL for two seconds.

Tip
If the Select mode in the Func. menu is set to "Source," the function menu automatically appears on the right side of the display, depending on the source you select. (see page 48)

2 Press SHUF repeatedly to select the mode.

Each time you press SHUF, the mode changes as follows:



Indication	Operation
1:disc	Plays all the tracks on the current disc in random order.
2:changer	Plays all the discs in the current CD/MD unit in random order (in case one or more optional CD/MD units are connected).
3:all	Plays all the discs in all the CD/MD units in random order (in case one or more optional CD/MD units are connected).
off	Normal playback

Selecting the mode with the wireless remote

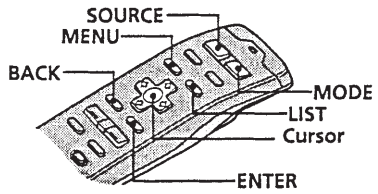
While playing a CD or an MD, press MENU and set the Shuffle mode to "1,""2," or "3."

EN

Creating a program

(CD/MD program memory)

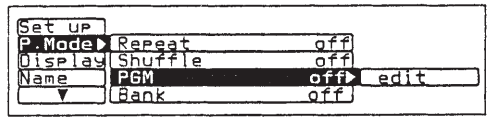
You can play tracks from this unit or any optional CD/MD unit in any order you want by creating and storing programs in the unit's memory. Two programs with up to 12 tracks each can be stored.



Tips
- In step 2, to move the cursor back to the previous column (one at a time), press ←.
- To cancel the current display and return to the previous display, press BACK.

1 While playing a CD or an MD, press MENU.

2 Select "P. Mode" and press → to move to the sub menu, then select "PGM" by pressing ↑ or ↓.



3 Press → to select "edit," then press ENTER.

The PGM Edit Mode appears.

4 Select the track you want to program.

❶ Press SOURCE repeatedly to select CD or MD.
❷ Press MODE repeatedly to select the desired CD or MD unit.
❸ Press LIST and select the desired disc by pressing cursor, then press ENTER.
❹ Press ← or → to select the track you want to program.

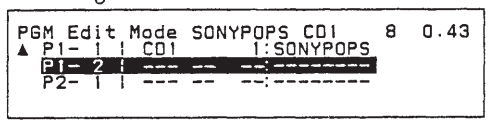
continue to next page →

EN

CD/MD

Note
Once all 12 slots have been filled, "MEMORY FULL" appears, and you cannot insert more tracks.

5 Press ↑ or ↓ to select the program number, "P1" or "P2," then press ENTER.
The current track in that slot number and all succeeding tracks shift down.



To continue inserting tracks, repeat steps 4 to 5.

6 To complete the mode setting, press BACK.
The normal display appears.

Notes
- "*Wait*" appears in the display while the unit is reading the data.
- "*Mem Full*" appears in the display when you try to enter more than 12 tracks into a program.
- "**NO data**" appears in the display when no program is stored.

Playing the stored program

1 While playing a CD or an MD, press MENU.

2 Select "P.Mode" and press → to move to the sub menu, then select "PGM" by pressing ↑ or ↓.

3 Press → then ↑ or ↓ to select the mode, then press ENTER.
The selected mode appears to the right of "PGM" in the display.

PGM 1 → PGM 2 → PGM 1+2 → off → PGM 1

Indication	Operation
1	Plays the track sequence of Program 1.
2	Plays the track sequence of Program 2.
1 + 2	Plays the track sequences of Program 1 and then Program 2.
off	Normal playback
edit	Sets the order of tracks and stores the program in memory.

Selecting the mode with the front panel control

While playing a CD or an MD, press PGM repeatedly to select "1," "2," or "1+2."

EN

CD/MD

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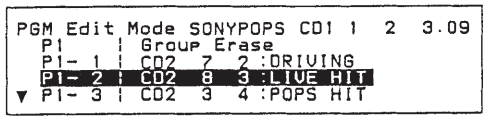
Erasing tracks in a program

1 **While playing a CD or an MD, press MENU.**

2 **Select "P. Mode" and press → to move to the sub menu, then select "PGM" by pressing ↑ or ↓.**

3 **Press → then ↑ or ↓ to select "edit," then press ENTER.**

4 **Press ↑ or ↓ to select the track you want to erase.**



5 **Press and hold ENTER for two seconds.**
When you erase a track from a slot number, the succeeding tracks shift up to fill the gap.

To continue erasing tracks, repeat steps 2 and 3.

6 **To complete the mode setting, press BACK.**

7 **Press MENU.**
The previous display appears.

Erasing an entire program

Select "P1:Group Erase" or "P2:Group Erase." in step 2 above.
The entire program is erased and "NO data" appears.

EN

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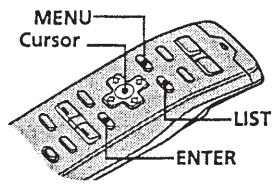
Labeling a CD – Disc Memo

(CD unit with the custom file function)

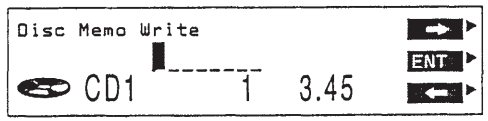
You can record a title of up to 8 characters for each disc. The disc title appears in the display whenever you insert the disc and play it. Up to 110 disc titles can be stored in memory.



Tip
To cancel the current display and return to the previous display, press BACK.

Tip
To erase/correct a name, enter "_" (under-bar) for each character.

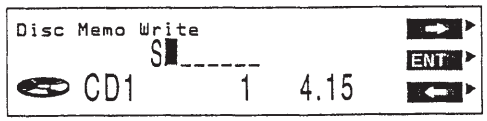
1 **While playing a CD, press LIST for two seconds.**
The Disc Memo Write indication appears.



2 **Press ↑ or ↓ until the character you want to enter appears, then press →.**
Each time you press ↑, the character changes as follows:

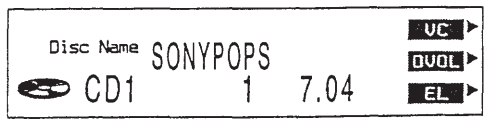
A → B → C → ...Z → 0 → 1 → 2 → ...9 → + → − → * → / → \ → > → < → . → _ (under-bar) → A...

Press ↓ to move backwards.



If you want to put a blank space between characters, select "_"(under-bar).

3 **Repeat step 2 until you have entered the entire title, then press ENTER.**
The normal display appears.



EN

CD/MD

EN

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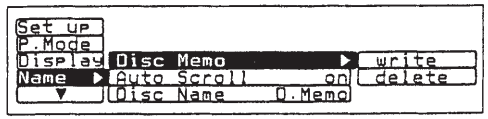
Erasing a disc title

1 While playing a CD or an MD, press MENU.

2 Select "Name" and press → to move to the sub menu, then select "Disc Memo" by pressing ↑ or ↓.



3 Press →, then ↑ or ↓ to select "delete," then press ENTER.
The Disc Memo Delete indication appears.

4 Press ↑ or ↓ to select the disc title you want to erase.

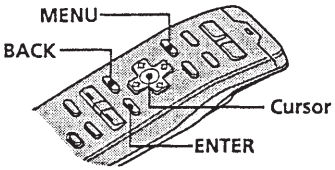
5 Press and hold ENTER for two seconds.
The selected disc title is erased.

6 Press MENU.
The normal display appears.

Note
In step 4, all the disc names stored in the CD unit's memory appear in the order they were entered. The last name entered will therefore appear at the end.

Selecting specific tracks for playback (Bank)

If you have labeled the disc (see page 25), the Bank function allows you to skip certain tracks and play only the tracks you want.



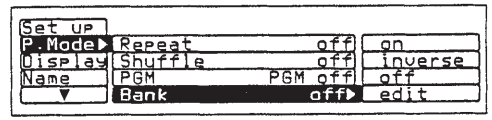
Tips
- In step 2, to move the cursor back to the previous column (one at a time), press ←.
- To cancel the current display and return to the previous display, press BACK.

Note
If you have not labeled the disc, "edit" does not appear in the menu.

To set tracks to "Play" or "Skip"

1 While playing a CD or an MD, press MENU.

2 Select "P.Mode" and press → to move to the sub menu, then select "Bank" by pressing ↑ or ↓.



3 Press → then press ↑ or ↓ to select "edit," then press ENTER.

4 Press ↑ or ↓ to select "Play" or "Skip," then press → to move to the next track.

5 Repeat step 4 to select "Play" or "Skip" for all succeeding tracks.

6 To complete the mode setting, press BACK.

7 Press MENU.
The normal display appears.

Note
Press ← to move to the previous track.

EN

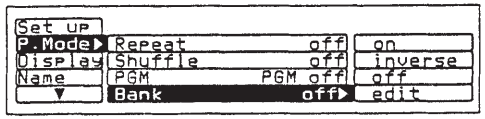
CD/MD

Note
You cannot use the Bank function for discs that have not been labeled using the Disc Memo function. Be sure to label the disc in advance.

Playing specific tracks only

1 **While playing a CD or an MD, press MENU.**

2 **Select "P.Mode" and press ➡ to move to the sub menu, then select "Bank" by pressing ↑ or ↓.**



3 **Press ➡ then ↑ or ↓ to select the mode, then press ENTER.**
The selected mode appears to the right of "Bank" in the display.

Indication	Operation
on	Plays all tracks set to "Play."
inverse	Plays all tracks set to "Skip."
off	Normal playback
edit	Sets tracks on the current disc to "Play" or "Skip."

4 **Press MENU.**
The normal display appears.

EN

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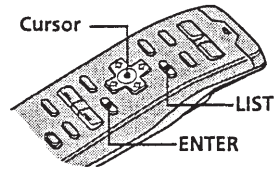
Locating a disc by name

Use this function to locate a disc by its name.
(To add titles to discs, see page 25).



Tips
- To cancel the selection, press LIST twice or BACK once.
- If the SEEK/AMS mode is set to "Item sel," you can select the desired disc with SEEK/AMS when the list appears in the display (see page 45).

Note
The following indications may appear in the disc name list.
- "NO DISC": There is no disc in the given disc slot.
- "********": The disc is not labeled.
- "?": The unit has not verified the disc information.

1 **While playing a CD or an MD, press LIST.**
The Disc name list appears.

2 **Press ↑, ↓, ➡, or ⬅ to select the disc.**

3 **Press ENTER.**
Playback starts from the first track of the disc.

On track name list

Each time you press LIST, the display changes as follows:

→ Disc name list* → Track name list** → Cancel ←

* Only when CD/MD unit is connected.
** When CD unit with CD TEXT function is selected.

This list displays track names contained on CD TEXT discs and MDs with labeled tracks. Since this unit does not support track labeling, when playing non-CD TEXT discs or MDs with unlabeled tracks, "********" appears instead of the track name in the track name list.

To select a disc using the rotary remote

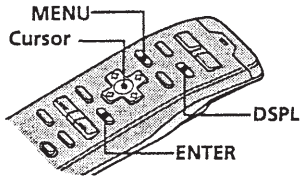
Push in and release DISC/PRESET to display the disc name list or track name list.
Push and rotate the control to select the disc or track from the list. After about 5 seconds, the normal display reappears.

EN

CD/MD

Viewing CD TEXT information

You can view text information contained on a CD TEXT disc during playback.



Tips

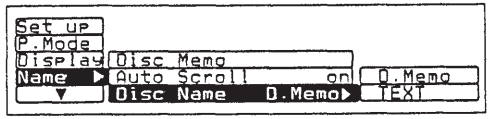
- In step 2, to move the cursor back to the previous column (one at a time), press ←.
- To cancel the current display and return to the previous display, press BACK.

Selecting the disc name display

When playing CD TEXT discs that have been labeled using the Disc Memo function (see page 25), you can specify that disc names be displayed whenever you press DSPL or LIST.

1 While playing a CD, press MENU.

2 Select "Name," press → to move to the sub menu, then select "Disc Name" by pressing ↑ or ↓.



3 Press → then ↑ or ↓ to select "D.Memo" or "TEXT," then ENTER.

The selected mode appears to the right of "Disc Name" in the display.

Indication	Operation
D.Memo	Displays disc titles entered by the Disc Memo function.
TEXT	Displays original CD TEXT information.

4 Press MENU.

The normal display appears.

What is a CD TEXT disc?

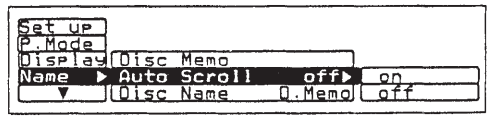
A CD TEXT disc is a music CD that also contains text data such as the disc name, artist name, and track name. This text data is recorded in areas normally unused on conventional music CDs.

Scrolling titles automatically

When playing CD TEXT discs or MDs (using an optional MD unit,) the track or disc/artist name appears automatically whenever a new disc or track is played. Follow the procedure below to specify the automatic scrolling of titles of more than 10 characters.

1 While playing a CD or an MD, press MENU.

2 Select "Name," press → to move to the sub menu, then select "Auto Scroll" by pressing ↑ or ↓.



3 Press → then ↑ or ↓ to select "on," then ENTER.

4 Press MENU.

The normal display appears.

To cancel the scrolling of titles

Select "off" in step 3 and press ENTER.

When playing a CD TEXT disc

Each time you press DSPL, the displayed information changes as follows:

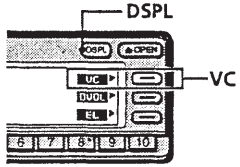
Disc Name/Artist Name* ⟷ Track Name

* The artist name appears automatically after the disc name.

Customizing the CD sound

(Digital filter function)

This unit has a variable coefficient (VC) digital filter. By selecting the type of filter you want, you can adjust the sound characteristics which best compliment your speaker, source, unit, etc.



Notes

- This function is available only for this unit and has no affect when an optional CD/MD unit or radio, etc. is selected.
- If you are playing a disc when you press VC, the sound will be interrupted momentarily.

1 While playing a CD, press and hold DSPL for two seconds.

Tip

If the Select mode in the Func. menu is set to "Source," the function menu automatically appears on the right side of the display, depending on the source you select. (see page 48)

2 Press VC repeatedly to select the mode.

Each time you press VC, the filter type changes as follows:

Plain → Analog A → Analog B → Standard

Type	Sound image
Plain	• high clarity • strong
Analog A Analog B	• warm • deep
Standard	• wide ranging • ample spatial representation

What is a variable coefficient (VC) digital filter?

CD players use digital filters to eliminate the noise generated during sampling. You can change the tone of your music by changing the cutoff characteristics of the digital filter. This unit has four types of filters with different coefficient characteristics: "Plain," "Analog A," "Analog B," and "Standard."

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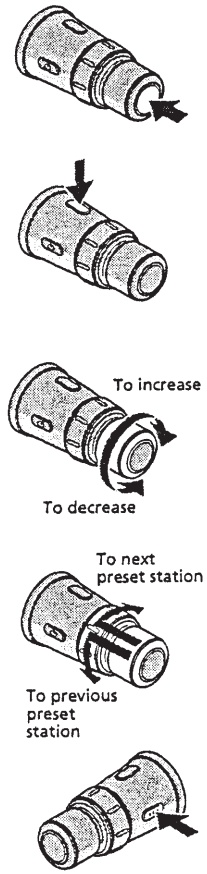
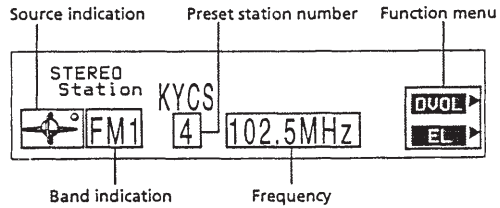
Listening to radio

You can store your favorite radio stations in the unit's memory for instant tuning at a later time (see "Presetting radio stations" on page 34).



1 Press SOURCE repeatedly to select tuner.

2 Press MODE repeatedly to select FM1, FM2, or AM.



3 Rotate VOL to adjust the volume level.

The volume is adjustable between 0 dB to – ∞ dB.

Caution

For your safety, set the volume low enough so that you can hear the sounds in the street around you.

4 To change the preset station, push in and rotate DISC/PRESET.

To stop listening to the radio

Press OFF.

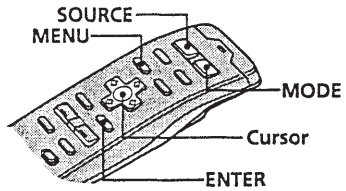
EN

CD/MD/Radio

Presetting radio stations

There are two ways to preset radio stations:
- Selecting the station frequency (Manual preset memory)
- Selecting stations with the strongest signals (BTM*)

* Best Tuning Memory



Tips
- In step 2, to move the cursor back to the previous column (one at a time), press ←.
- To cancel the current display and return to the previous display, press BACK.

Tip
- Rotate and hold AMS/SEEK on the rotary remote to continue searching, then release the control when the frequency you want appears.

Note
If you selected AM in step 2, the "Mono/Stereo" and "Antenna" sub menus will not appear in the display.

Specifying the station frequency (Manual Preset Memory)

Caution
When tuning in stations while driving, use the Best Tuning Memory to prevent an accident (see page 36).

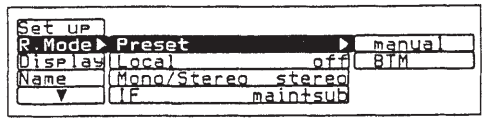
1 Press SOURCE repeatedly to select tuner.

2 Press MODE repeatedly to select FM1, FM2, or AM.

3 Press and hold ← or → until the frequency you want appears in the display, then release the button.

4 Press MENU.

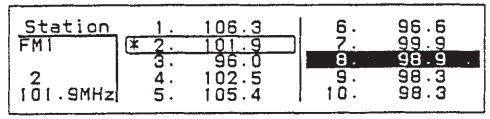
5 Select "R.Mode" and press → to move to the sub menu, then select "Preset" by pressing ↑ or ↓.



Tip
If the SEEK/AMS mode is set to "Item sel," you can select the desired station with SEEK/AMS when the list appears in the display (see page 45).

Note
If you assign a new frequency to a preset station number that has already been assigned a frequency, the new frequency replaces the old frequency.

6 Press →, then ↑ or ↓ to select "manual," then ENTER.



7 Press ↑, ↓, →, or ← to select the preset station number to which the frequency will be stored then press ENTER.
You can preset up to 20 FM stations (10 stations each in FM1 and FM2) and up to 10 AM stations.

8 Press MENU.
The normal display appears.

To receive a station automatically (Automatic Tuning)

Press and release ← or →.
"Seek Up" or "Seek Down" appears until the unit detects a station.

For a lower frequency ← → For a higher frequency

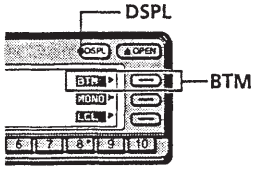
Tip
You can start Automatic Tuning by momentarily rotating SEEK/AMS on the rotary remote, then releasing it.

Presetting the station with the front panel controls

After tuning in the station, press and hold the desired number button for two seconds.

Tip
If the Select mode the in Func. menu is set to "Source," the function menu is automatically appears on the right side of the display, depending on the source you select. (see page 48)

Selecting stations with the strongest signals (BTM)



1 **While listening to an FM or AM broadcast, press and hold DSPL for two seconds.**

2 **Press BTM.**
The unit selects the station with the strongest signals and memorizes them in the order of their frequencies.

A beep sounds after storing the stations and the unit returns to the normal display.

Note
If the radio can only tune in a few stations or receives only weak frequencies, the BTM function may not assign frequencies to all the preset station numbers.

Selecting the mode with the wireless remote
While listening to an FM or AM, press MENU and set the Preset mode to "BTM."

What is the BTM (Best Tuning Memory) function?
BTM is a function that selects the radio stations with the strongest signals and automatically sets them to preset station numbers. The BTM function starts tuning in stations from the lowest frequency on the band (FM or AM). When a station is found, the unit assigns the frequency to the currently selected preset station number. When preset numbers are not displayed, the unit assigns frequencies starting with preset station 1.
Even after the unit has assigned frequencies to all the preset station numbers, the unit continues tuning. If stronger signals are found, the unit replaces the current preset stations with the stronger frequencies. Finally, the unit sorts the stations in ascending order by frequency.

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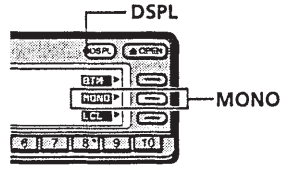
Specifying monaural/ Stereo mode

If the FM stereo reception is poor, you can select "Mono" to improve the sound.



1 **While listening to an FM broadcast, press and hold DSPL for two seconds.**

Tip
If the Select mode in the Func. menu is set to "Source," the function menu automatically appears on the right side of the display, depending on the source you select. (see page 48)

2 **Press MONO repeatedly to select "on."**
The sound will improve, but will not be in stereo.

To cancel the monaural mode
Select "off" in step 2 above.

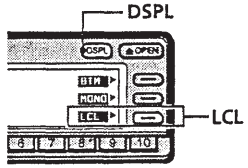
Selecting the mode with the wireless remote
While listening to FM or AM, press MENU and set the Mono/Stereo mode to "mono," or "stereo."

EN

Radio

Receiving only the strongest signals (Local on/off)

The Automatic Tuning function may stop frequently when there are many radio stations in the area. If this happens, you can reduce the sensitivity of the tuner so that only the strongest signals are tuned in.



1 While listening to an FM or AM broadcast, press and hold DSPL for two seconds.

Tip

If the Select mode in the Func. menu is set to "Source," the function menu automatically appears on the right side of the display, depending on the source you select. (see page 48)

2 Press LCL repeatedly to select "on."

Only the stations with relatively strong signals will be tuned in.

To cancel the local mode

Select "off" in step 2 above.

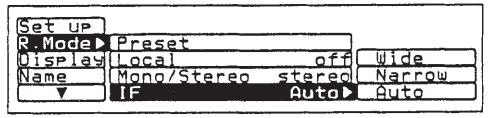
Selecting the mode with the wireless remote

While listening to FM or AM, press MENU and set the Local mode to "on," or "off."

If interference occurs during FM reception

1 While listening to an FM broadcast, press MENU.

2 Select "R.Mode" and press → to move to the sub menu, then select "IF" by pressing ↑ or ↓.



3 Press → then ↑ or ↓ to select the mode, then press ENTER.

The selected item appears to the right of "IF" in the display.

Type	Function
Wide	Maximizes signal reception and improves sound quality.
Narrow	Prevents interference from neighboring stations.
Auto	Switches the mode between "Narrow" and "Wide" automatically.

4 Press MENU.

The normal display appears.

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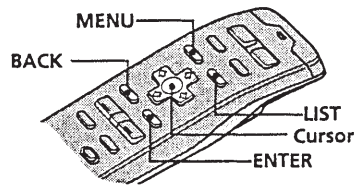
Labeling radio stations (Station Memo)

You can add a title of up to 8 characters to each station. The station name appears in the display whenever the station is selected. Up to 44 station names can be stored in memory.

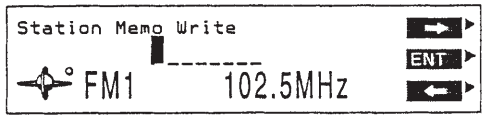


Tip
To cancel the current display and return to the previous display, press BACK.

Tip
To erase/correct a name, enter "_" (under-bar) for each character.

1 **Tune in the station you want to label.**

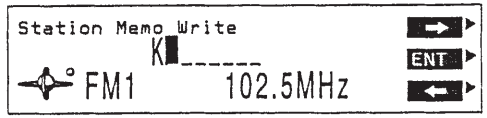
2 **Press LIST for two seconds.**
The Station Memo Write indication appears.



3 **Press ↑ or ↓ until the character you want to input appears and press →.**
Each time you press ↑, the character changes as follows:

A → B → C → ...Z → 0 → 1 → 2 → ...9 → + → - → * → / → \ → > → < → . → _ (under-bar) → A...

Press ↓ button to move backwards.



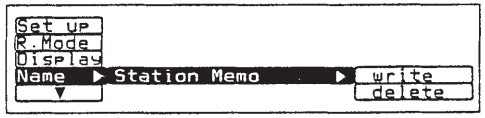
If you want to put a blank space between characters, select "_"(under-bar).

4 **Repeat step 3 until you have entered the entire name, then press ENTER.**
The normal display appears.

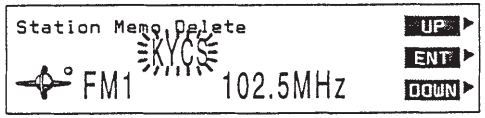
Erasing a station name

1 **While listening to an FM or AM broadcast, press MENU.**

2 **Select "Name," press → to move to the sub menu, then select "Station Memo" by pressing ↑ or ↓.**



3 **Press →, then ↑ or ↓ to select "delete," then ENTER.**
The Station Memo Delete indication appears.



Note
In step 4, all the station names stored in memory appear in the order they were entered. The last station name entered will therefore appear at the end.

4 **Press ↑ or ↓ to select the station name you want to erase.**

5 **Press and hold ENTER for two seconds.**
The selected station name is erased.

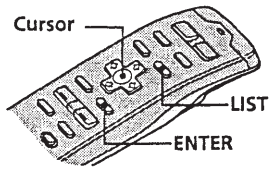
Repeat steps 4 and 5 if you want to erase other station names.

6 **To complete the mode setting, press BACK.**

7 **Press MENU.**
The normal display appears.

Selecting a station by name

You can use this function to select a station by the name that has been stored in memory for it.



Tips
- To cancel the selection, press LIST.
- If the SEEK/AMS mode is set to "Item sel," you can select the desired disc with SEEK/AMS when the list appears in the display (see page 45).

1 While listening to an FM or AM broadcast, press LIST.
The preset name List appears.

Station					
FM1	1.	106.3	6.	96.6
	* 2.	101.9	7.	99.9
	3.	96.0	8.	98.9
2	4.	102.5	9.	98.3
101.9MHz	5.	105.4	10.	98.3

2 Press ↑, ↓, →, or ← to select the station.

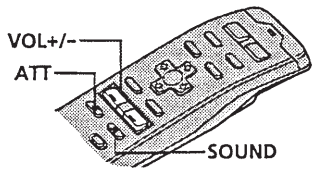
3 Press ENTER.
The unit selects the station, and the normal display appears.

To select a station using the rotary remote

Push in and release DISC/PRESET to display the present name list.
Push and rotate the control to select the station from the list. After about 5 seconds, the normal display reappears.

Adjusting the sound characteristics

You can adjust the bass, treble, balance, and fader. The bass and treble levels can be stored respectively for each source.



1 Press SOUND repeatedly to select the item you want to adjust.
Each time you press SOUND, the item changes as follows:

→ Volume → Sub W (subwoofer volume) → Bass* →
Fader (rear-front) ← Balance (left-right) ← Treble* ←

* Only when the DVOL (Direct Volume) function is turned off.

2 Adjust the selected item by pressing VOL + or –.
Adjust within three seconds after selecting the item. (After three seconds, VOL + and – function as the volume button.)

Tip
The unit decreases the volume automatically when a telephone call comes in (Telephone ATT function).

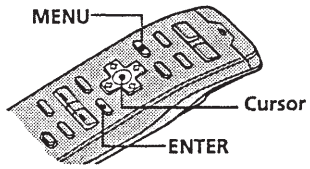
Attenuating the sound

Press ATT.
The unit automatically decreases the volume to a low level.

To restore the previous volume level, press ATT again.

Setting the set up menu

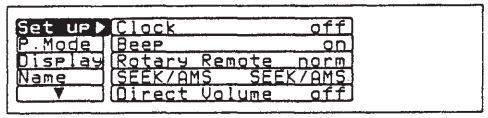
Use the Set up menu to perform additional settings, including Clock, Beep, Rotary remote, SEEK/AMS, Key select, Digital out, VC (Variable Coefficient) filter, and Direct Volume.



Tips

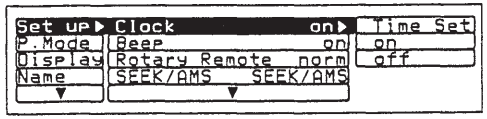
- In step 2, to move the cursor back to the previous column (one at a time), press ←.
- To cancel the current display and return to the previous display, press BACK.

1 Press MENU and select "Set up."



2 Press → to move to the sub menu, then select the setting by pressing ↑ or ↓.

The current setting appears to the right of the sub menu.



3 Change the setting and press ENTER.

The new setting appears to the right of the sub menu.

Sub menus and the method for changing their settings are explained in the table on the next page.

4 Press MENU.

The normal display appears.

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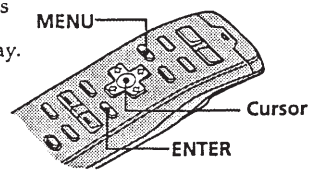
Sub Menu	Explanation and settings
Clock	Select "on" to display the current time in the upper-left corner of the display at all times. If you select "off," the time is displayed only when the system is turned off. Select "Time Set" to set the clock (see page 6).
Beep	Specifies whether a beep sounds when an operation button is pressed.
Rotary remote	Reverses the rotational direction of the rotary remote for controlling operations. Select "normal" for increasing volume, frequency, track numbers, etc. by rotating the remote clockwise. Select "reverse" for increasing the same parameters by rotating the remote counterclockwise.
SEEK/AMS	The SEEK/AMS function has two modes: Normal mode — Select "SEEK/AMS" to quickly locate tracks or stations. Item select mode — When the name list is displayed, select "Item sel" to locate discs or stations using the rotary remote or the front panel control.
Digital out	Select "ON" to output the digital signals through DIGITAL OUT if optional equipment with digital input is connected. Select "OFF" to cancel the output of digital signals.
VC filter	Select one of nine filter types for adjusting the sound to match your desired sound image, the music source, etc.
Direct Volume	Select "on" to output the signal without processing through the volume control circuit for pure high quality sound. In this case, the bass and treble adjustment do not work. Select "off" to output the signal through the tone control circuit. You can control the bass and treble levels, but the pureness of the original sound will be degraded.

EN

Setting the display menu

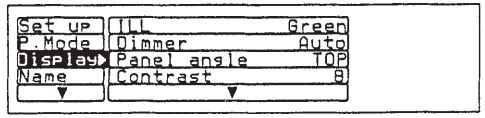
Use the Display menu to perform additional settings including Illumination, Dimmer, Panel angle, Font Style, Contrast, EL (Electric Luminosity), and Display.



Tips

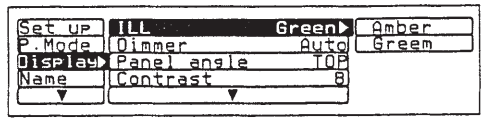
- In step 2, to move the cursor back to the previous column (one at a time), press ←.
- To cancel the current display and return to the previous display, press BACK.

1 Press MENU and select "Display."



2 Press → to move to the sub menu, then select the item you want to set by pressing ↑ or ↓.

The current sub menu setting appears to the right of the item.



3 Change the setting and press ENTER.

The new setting appears to the right of the item.

For an explanation of the sub menus, see the table on the next page.

4 Press MENU.

The normal display appears.

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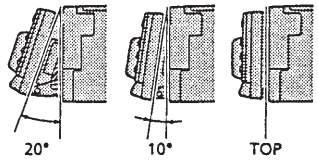
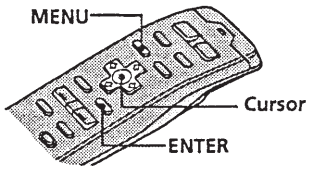
Sub menu	Explanation and setting
ILL (Illumination)	Select "Amber" or "Green" for the button colors of the front panel.
Dimmer	Select "Auto" to dim the brightness of the display whenever you turn the lights on.
Panel angle	Select either "10," or "20" degrees to automatically set the front panel angle. Select "Top" for normal angle. 
Contrast	Select 1 of 15 contrast levels for the display. Select "Contrast," then press ENTER. You can change the current setting by pressing ← or →. Press ENTER again to change the setting.
Font Style	Select "Regular" or "Bold" to set the style of the display characters.
EL (Electric Luminosity) (Display window sleep mode)	Select "on" to have the display window automatically turn off after a few moments whenever you operate any of the controls. Select "off" to have the display window appear constantly.
Display	Select "Negative" to reverse the display window contrast. Select "Positive" to display the original contrast.

EN

Other functions

Setting the function menu

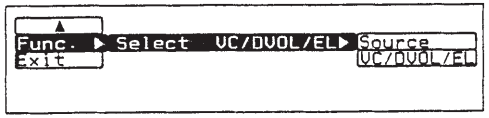
Use the function menu to assign the specific function mode to each function button.



Tips
- In step 2, to move the cursor back to the previous column (one at a time), press ←.
- To cancel the current display and return to the previous display, press BACK.

1 **Press MENU and select "Func."**

2 **Press → to move to the sub menu, then select "Select."**
The current sub menu setting appears to the right of the item.



3 **Change the setting and press ENTER.**
The new setting appears to the right of the item.

For an explanation of the sub menus, see the table below.

Indication	Explanation and settings
Select	Select "Source" to display the function menu depending on each source or setting mode. Select "VC/DVOL/EL" to display VC, DVOL, and EL independently of the selected source or setting mode.

4 **Press MENU.**
The normal display appears.

EN

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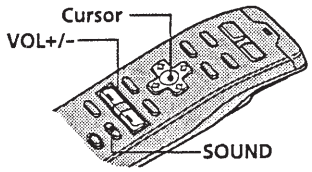
DSP

Selecting a surround menu

The optional XDP-U50D lets you add some effects to the sound field of the currently selected source. The followings are the operating instructions for the XDP-U50D.
When the XDP-210EQ is connected to the unit, refer to the instructions manual supplied to the XDP-210EQ.



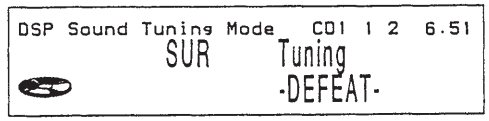
Tips
- Each time you press SOUND, the tuning item changes as follows:

SUR (Surround) → POS (Position) → SUB (Subwoofer) → BAS (Bass) → TRE (Treble) → SUR (Surround)

- In step 3, press → to switch to the effect level adjustment.

1 **Press and hold SOUND for two seconds.**
The DSP Sound Tuning Mode appears.

2 **Press SOUND repeatedly to select "SUR Tuning."**



3 **Press VOL + or – to select the surround menu.**
The surround menu appears in the order shown on the next page.

4 **Press and hold SOUND for two seconds.**
The normal display appears.

continue to next page →

EN

Other functions/DSP

EN

Surround menu	Effect of sound field
HALL	Concert hall
JAZZ	Jazz club
DISCO	Disco with thick walls
THEATER	Movie theater
PARK	Big open space
LIVE	Live concert
OPERA	Opera house
CHURCH	Church/chapel with a lot of reverberation
STADIUM	Open-air concert in a stadium
CELLAR	Cellar with a lot of reverberation
-DEFEAT-	Normal sound without any DSP effects

Adjusting the effect level

1 **Follow the steps 1 through 3 of "Selecting a surround menu" (see page 49).**

2 **Press ➡, then VOL + or – to adjust the level.**
The effect level is adjustable from 0 to 100%. Increase the level to enhance the effect.

3 **Press and hold SOUND for two seconds.**
The normal display mode appears.

Note
You cannot adjust the effect level of "-DEFEAT-."

Tip
In step 2, press ➡ again to switch to the sound menu selection.

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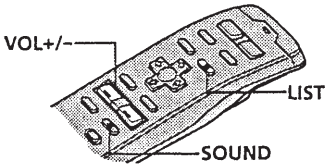
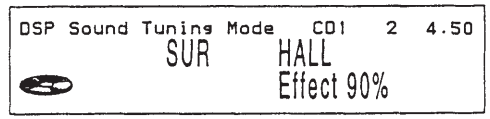
Storing a surround effect for CDs (DSP custom file)

Once you have registered the desired surround menu for the discs, you can enjoy the same surround menu every time you play that disc. (Only when you have labeled the disc using the Custom file function.)



1 **Press and hold SOUND for two seconds.**
The DSP Sound Tuning Mode appears.



2 **Press VOL + or – to adjust to the desired sound effect.**

3 **Press and hold LIST for two seconds.**

4 **Press and hold SOUND for two seconds.**
The normal display mode appears.

EN

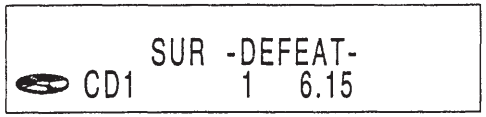
DSP

Note
You can use this function for discs that have been assigned a custom name.

Playing a disc with a stored surround effect

1 While playing a CD, press and hold LIST for two seconds.
The Disc Memo Write indication appears.

2 Press LIST.
The DSP Tuning Mode appears.



3 Press VOL + or – to select the surround menu.

4 Press and hold LIST for two seconds.
The normal display appears.

Changing the stored surround effect

Play the disc whose surround effects you want to change, then follow the steps of "Storing the surround effect for CDs"(see page 51).

Erasing the stored surround effect

Select "-DEFEAT-" in step 3 of "Selecting a surround menu" (see page 49).

EN

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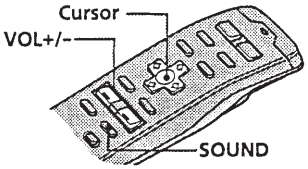
Selecting the listening position

You can set a delayed time for the sound to reach the listeners from the speakers. In this way, the unit can simulate a natural sound field so that you feel as if you are in the center of the sound field wherever you sit in the car.



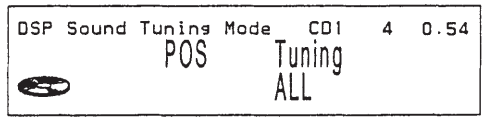
Tips
- Each time you press SOUND, the tuning item changes as follows:

SUR (Surround) → POS (Position) → SUB (Subwoofer) → BAS (Bass) → TRE (Treble) → SUR (Surround)

- In step 3, press ➡ to switch to the listening position adjustment. (see next page)

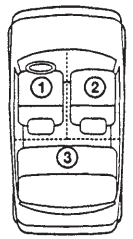
1 Press and hold SOUND for two seconds.
The DSP tuning mode appears.

2 Press SOUND repeatedly to select "POS Tuning."



3 Press VOL + or – repeatedly to select the listening position.
The position appears in the order shown below.

Indication	Center of sound field
All	Normal setting (① + ② + ③)
Front	Front part (① + ②)
Front R	Right front (②)
Front L	Left front (①)
Rear	Rear part (③)



4 Press and hold SOUND for two seconds.
The normal display appears.

EN

DSP

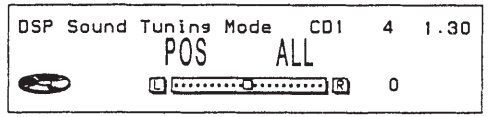
Tip
You cannot adjust the effect level of "-DEFEAT-."

Adjusting the listening position

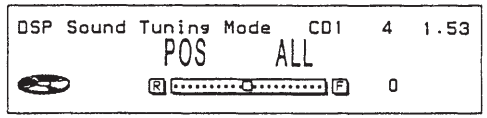
1 **Follow steps 1 through 3 of "Selecting the listening position" (see page 53).**

2 **Adjust the center of the sound field.**

❶ Press ➡.
❷ Press VOL + or – to adjust the center to the left or right.



❸ Press ➡.
❹ Press VOL + or – to adjust the center to the rear or front.



3 **Press and hold SOUND for two seconds.**
The normal display appears.

EN

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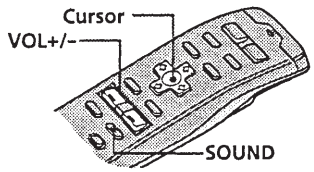
Adjusting the cut-off frequency of the subwoofer(s)



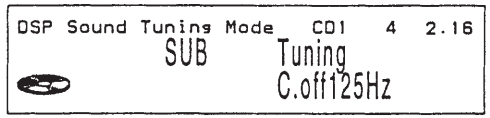
Tips
- Each time you press SOUND, the tuning item changes as follows:

SUR (Surround) → POS (Position) → SUB (Subwoofer) → BAS (Bass) → TRE (Treble) → SUR (Surround)

- In step 3, press ➡ to switch to the subwoofer's volume adjustment. (see next page)

1 **Press and hold SOUND for two seconds.**
The DSP Sound Tuning Mode appears.

2 **Press SOUND repeatedly to select "SUB."**



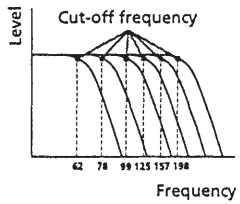
3 **Press VOL + or – repeatedly to select the cut-off frequency.**
The frequency appears in the order as follows.

62Hz ⟷ 78Hz ⟷ 99Hz ⟷ 125Hz* ⟷ 157Hz ⟷ 198Hz

* Factory-set frequency

4 **Press and hold SOUND for two seconds.**
The normal display appears.

What is the cut-off frequency?
To match the characteristics of the connected subwoofer(s), you can cut out the unwanted high and middle frequency signals entering the subwoofer(s). By setting the cut-off frequency, the subwoofer(s) will output only low frequency signals so you can get a clearer sound image.



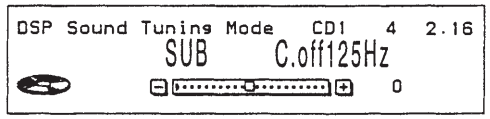
EN

DSP

Adjusting the volume of the subwoofer(s)

1 **Follow the steps 1 through 2 of "Adjusting the cut-off frequency of the subwoofer(s)" (see page 55).**

2 **Press ➡, then VOL + or – to adjust the level.**



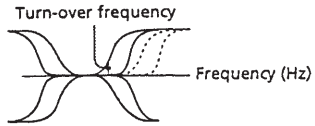
3 **Press and hold SOUND for two seconds.**
The normal display appears.

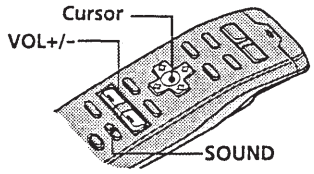
Note
When you adjust the volume all the way down, "SUB W ATT" appears and the cut-off frequency of the subwoofer is disabled.

EN

Adjusting the turn-over frequency of the bass and treble

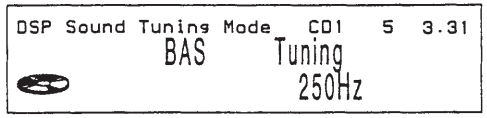
You can adjust the bass and treble turn-over frequencies to best fit the acoustic characteristics inside your car.





1 **Press and hold SOUND and hold for two seconds.**
The DSP Sound Tuning Mode appears,

2 **Press SOUND repeatedly to select "BAS" or "TRE."**



3 **Press VOL + or – repeatedly to select the turn-over frequency.**
The turn-over frequency appears in the order as follows:

BAS:
198Hz ⟷ 250Hz ⟷ 314Hz* ⟷ 396Hz

TRE:
2.00kHz ⟷ 3.17kHz* ⟷ 4.00kHz ⟷ 5.03kHz*

* Factory-set frequency

4 **Press and hold SOUND for two seconds.**
The normal display mode appears.

Tips
- Each time you press SOUND, the tuning item changes as follows:

SUR (Surround) → POS (Position) → SUB (Subwoofer) → BAS (Bass) → TRE (Treble) → SUR (Surround)

- In step 3, press ➡ to switch to the volume adjustment of bass and treble. (see next page)

EN

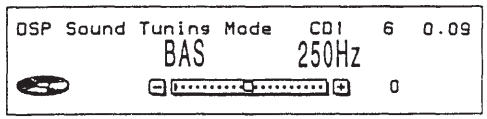
DSP

Adjusting the volume of the bass and treble

1 **Press and hold SOUND for two seconds.**
The DSP Sound Tuning Mode appears.

2 **Press SOUND repeatedly to select "BAS" or "TRE."**

3 **Press →, then VOL + or – to adjust the level.**



4 **Press and hold SOUND for two seconds.**
The normal display appears.

Listening to each program source in its registered surround effect

(Last Sound Memory (LSM))

Each time you restore the same source, you can hear the same surround effect registered for that source, even after changing the program source or turning the unit off and then on again.

EN

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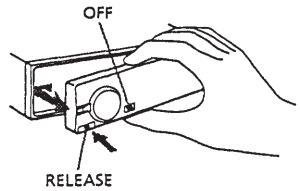
Additional information

Detaching the front panel

You can detach the front panel of this unit to protect the unit from being stolen.

1 **Press OFF.**

2 **Press RELEASE to open the front panel, then slide the front panel to the left side, and pull out from the right side of the front panel.**

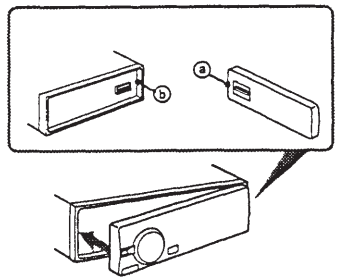


Notes

- Do not put anything on the inner surface of the front panel.
- Be sure not to drop the panel when detaching it from the unit.
- If you detach the panel while the unit is still on, the power will turn off automatically to prevent the speakers from being damaged.
- When you carry the front panel with you, put it in the supplied front panel case.

Attaching the front panel

Place the hole ⓐ on the front panel onto the spindle ⓑ on the unit as illustrated, then push the left side in.



Caution alarm

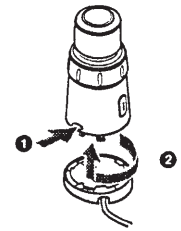
If you turn the ignition key switch to the OFF position without removing the front panel, the caution alarm will beep for a few seconds (only when the ACC Position is set to "yes") (see page 4).

Notes

- Be sure not to attach the front panel upside down.
- Do not press the front panel hard against the unit when attaching it. Press it lightly against the unit.
- Do not press hard or put excessive pressure on the display windows of the front panel.
- Do not expose the front panel to direct sunlight or heat sources such as hot air ducts, and do not leave it in a humid place. Never leave it on the dashboard of a car parked in direct sunlight where there may be a considerable rise in temperature.

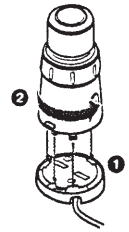
Detaching the rotary remote

You can detach the rotary remote as a safety measure against theft.
Turn the remote clockwise while pressing down RELEASE.



Attaching the rotary remote

Align the four holes on the bottom of the rotary remote to the four catches on the holder and slide the rotary remote until it locks into place as illustrated.



EN

DSP/Additional information

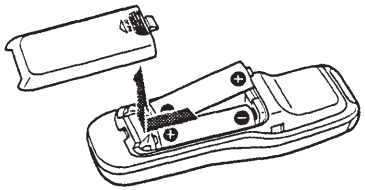
About the LCD display on the display section

When the temperature is extremely high or low, the display may become dim and hard to see. This is due to the characteristics of the LCD and is not a malfunction. The display will return to normal when the temperature becomes normal.

Wireless Remote

Installing batteries in the wireless remote

Insert two size-AA (R6) batteries with the correct polarity.



Battery life

When the batteries become weak, you will not be able to operate the unit with the wireless remote. Battery life is about six months (or shorter, depending on the way the remote is used). If the remote becomes inoperative, replace the batteries, then verify that it can operate the system.
If the red indicator no longer flashes when you press an operation button on the remote, it means the batteries are weak.

Notes on battery use

To avoid damage from battery leakage and corrosion:

— Make sure the polarity of the batteries match the + and – markings in the battery compartment.
— Do not use an old battery with a new one, or different types of batteries together.
— Remove the batteries when the system will not be used for a long period of time.
— Do not charge the batteries.

If any battery leakage occurs, replace both batteries after cleaning the battery compartment.

Notes on the wireless remote

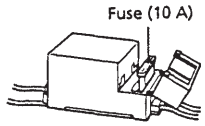
- To prevent deformation due to heat, do not leave the remote in a place subject to direct sunlight.
- Direct sunlight may affect the system's ability to receive infrared signals from the remote. If this happens, move the remote closer to the remote control sensor of the system.
- When parking your car, put the remote somewhere, such as the glove compartment, that is away from direct sunlight to prevent deformation due to heat.

EN

Additional information

Fuse replacement

When replacing the fuse, be sure to use one that matches the amperage described on the fuse. If the fuse blows, check the power connection and replace the fuse. If the fuse blows again after replacement, there may be an internal malfunction. In such a case, consult your nearest Sony dealer.



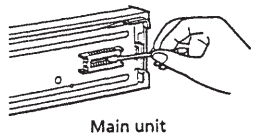
Warning

Never use a fuse with an amperage rating exceeding the one supplied with the unit as this could damage the unit.

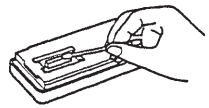
EN

Cleaning the connectors

The unit may not function properly if the connectors between the unit and the front panel are not clean. To prevent this, open the front panel by pressing RELEASE, then detach it and clean the connectors with a cotton swab dipped in alcohol. Do not apply too much force. Otherwise, the connectors may be damaged.



Main unit



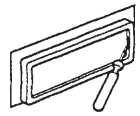
Back of the front panel

Notes

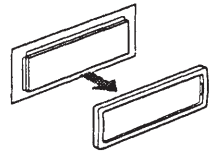
- For safety, before cleaning the connectors, turn off the engine and remove the key from the ignition switch.
- Never touch the connectors directly with your fingers or any metal device.

Dismounting the unit

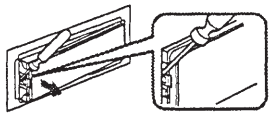
1 Press the clip inside the front cover with a thin screwdriver, and gently pry the front cover free.



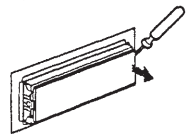
2 Repeat step 1 on the left side.
The front cover is removed.



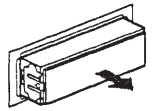
3 Use a thin screwdriver to push in the clip on the left side of the unit, then pull out the left side of the unit until the catch clears the mounting.



4 Repeat step 3 on the right side.



5 Slide the unit out of the mounting.



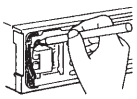
Connections

Caution

- This unit is designed for negative ground 12 V DC operation only.
- Before making connections, disconnect the ground terminal of the car battery to avoid short circuits.
- Connect the **yellow** and **red** power input leads only after all other leads have been connected.
- Be sure to connect the red power input lead to the positive 12 V power terminal which is energized when the ignition key is in the accessory position.
- **Run all earth wires to a common earth point.**
- The use of optical instruments with this product will increase eye hazard.

Reset button

When the installation and connections are over, be sure to press the reset button with a ball-point pen etc.

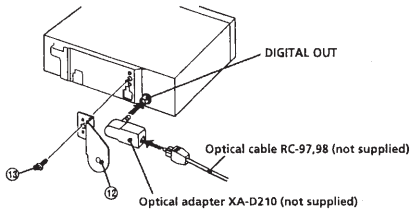


When making a digital connection

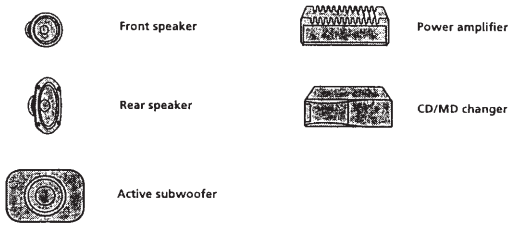
To connect a unit with an optical cable, connect the optical cable (optional) to the optical adapter (optional), and plug the adapter into the special socket on the rear of the unit. Then set the Digital out to "on".
To set the Digital out to "on" or "off", refer to the "Initial settings" in the Operating Instructions.

Notes

- *The Digital out is factory-set to off.*
- *If the Digital out is not correctly set, the unit will work without producing a sound.*

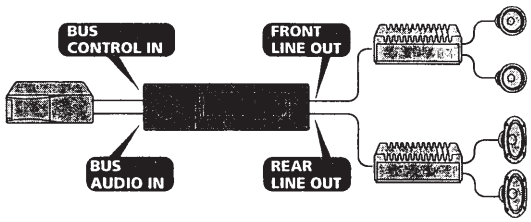


Equipment used in illustrations (not supplied)

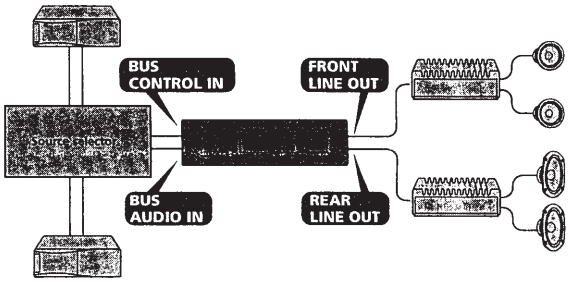


Connection diagram

Example 1

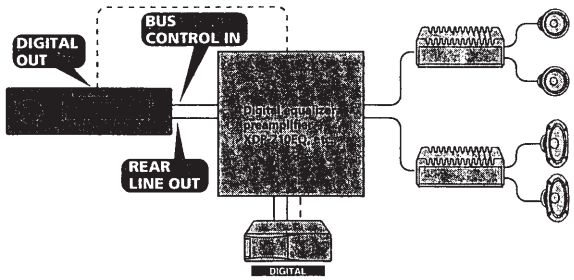


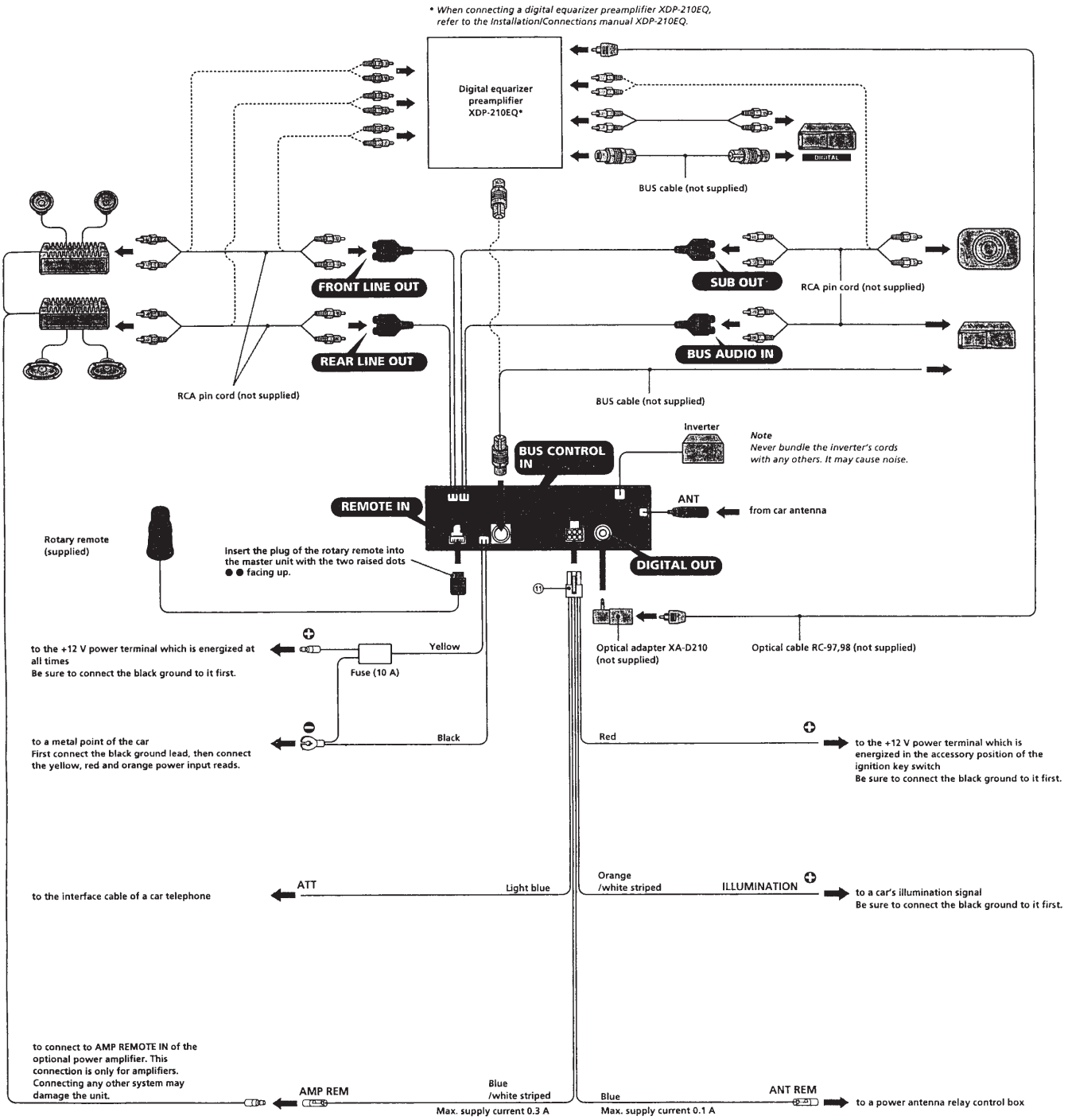
Example 2



For connecting two or more changers, the source selector XA-C30 (optional) is necessary.

Example 3




• When connecting a digital equarizer preamplifier XDP-210EQ, refer to the Installation/Connections manual XDP-210EQ.
Digital equarizer preamplifier XDP-210EQ*
BUS cable (not supplied)
FRONT LINE OUT
REAR LINE OUT
SUB OUT
RCA pin cord (not supplied)
BUS AUDIO IN
RCA pin cord (not supplied)
BUS cable (not supplied)
Inverter
Note
Never bundle the inverter's cords with any others. It may cause noise.
BUS CONTROL IN
REMOTE IN
ANT
from car antenna
Rotary remote (supplied)
Insert the plug of the rotary remote into the master unit with the two raised dots ● ● facing up.
DIGITAL OUT
Optical adapter XA-D210 (not supplied)
Optical cable RC-97,98 (not supplied)
to the +12 V power terminal which is energized at all times
Be sure to connect the black ground to it first.
Yellow
Fuse (10 A)
to a metal point of the car
First connect the black ground lead, then connect the yellow, red and orange power input reads.
Black
Red
to the +12 V power terminal which is energized in the accessory position of the ignition key switch
Be sure to connect the black ground to it first.
to the interface cable of a car telephone
ATT
Light blue
Orange /white striped
ILLUMINATION
to a car's illumination signal
Be sure to connect the black ground to it first.
to connect to AMP REMOTE IN of the optional power amplifier. This connection is only for amplifiers. Connecting any other system may damage the unit.
AMP REM
Blue /white striped
Max. supply current 0.3 A
Blue
Max. supply current 0.1 A
ANT REM
to a power antenna relay control box

Notes on the control leads
- *The power antenna control lead (blue) supplies +12 V DC when you turn on the tuner.*
- *A power antenna without relay box cannot be used with this unit.*

Memory hold connection
When the yellow power input lead is connected, power will always be supplied to the memory circuit even when the ignition key is turned off.

inverter

- Install the inverter far away from the unit using double-sided adhesive tape or something similar.
- Do not bundle the inverter's cord with a pincord or other connecting cord.
- Be sure not to mount the inverter under a mat or in a place exposed to splashing water of air conditioner. It may cause electric shock or damage to the unit.

Vote
f the inverter's cord is pinched, the display indications may not appear.

Using the optional power amplifier

This master unit, when connected to an optional power amplifier, is designed to reproduce high quality sound. To make the best use of the optional power amplifier, follow the steps below.

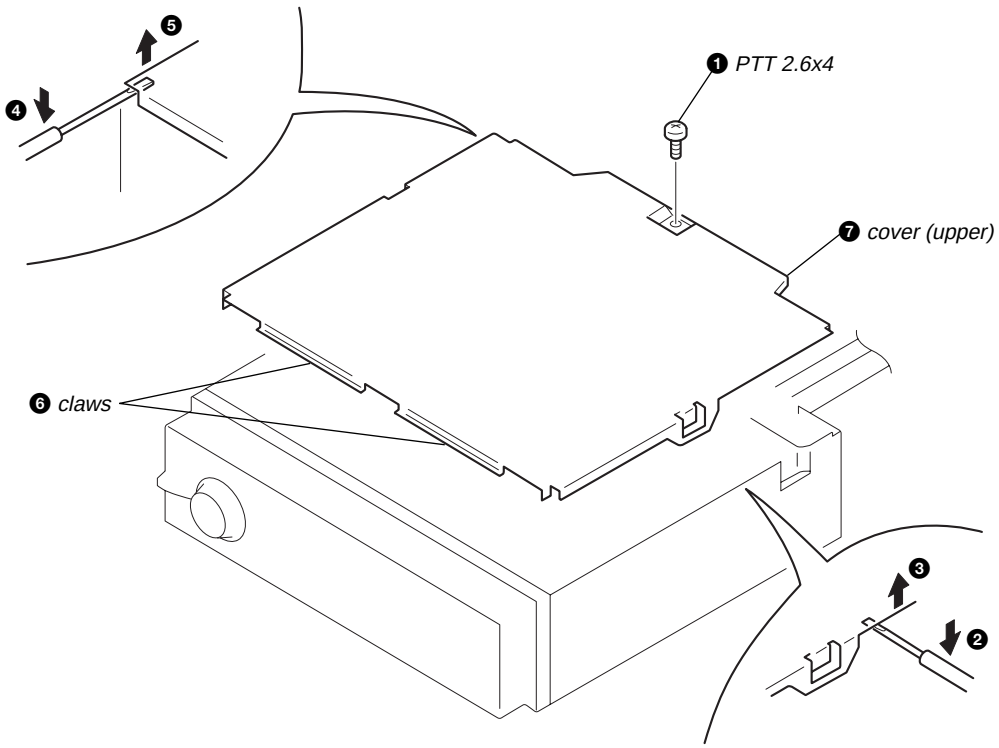
1 Use the dial to set the master unit's volume to the highest level possible, depending on the optional power amplifier. This improves the harmonic distortion and signal-to-noise ratio.

2 Use the power amplifier's LEVEL (GAIN) control to adjust the listening volume to a suitable level.

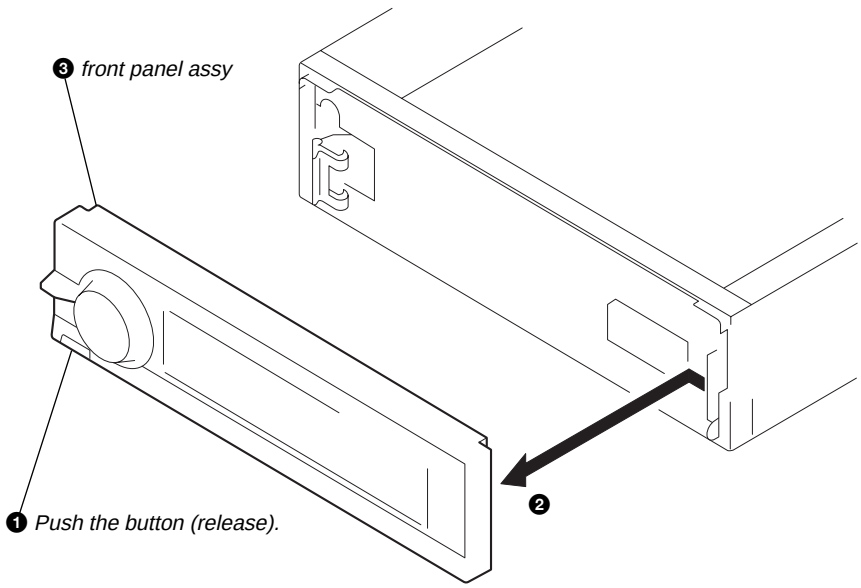
SECTION 2
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

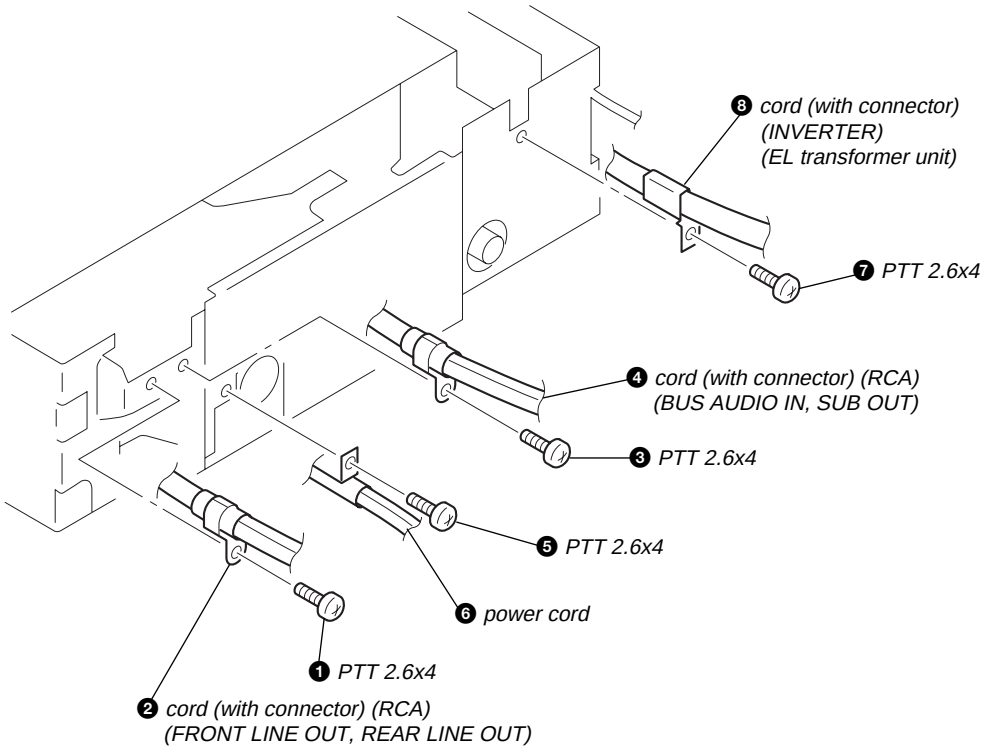
2-1. COVER (UPPER)



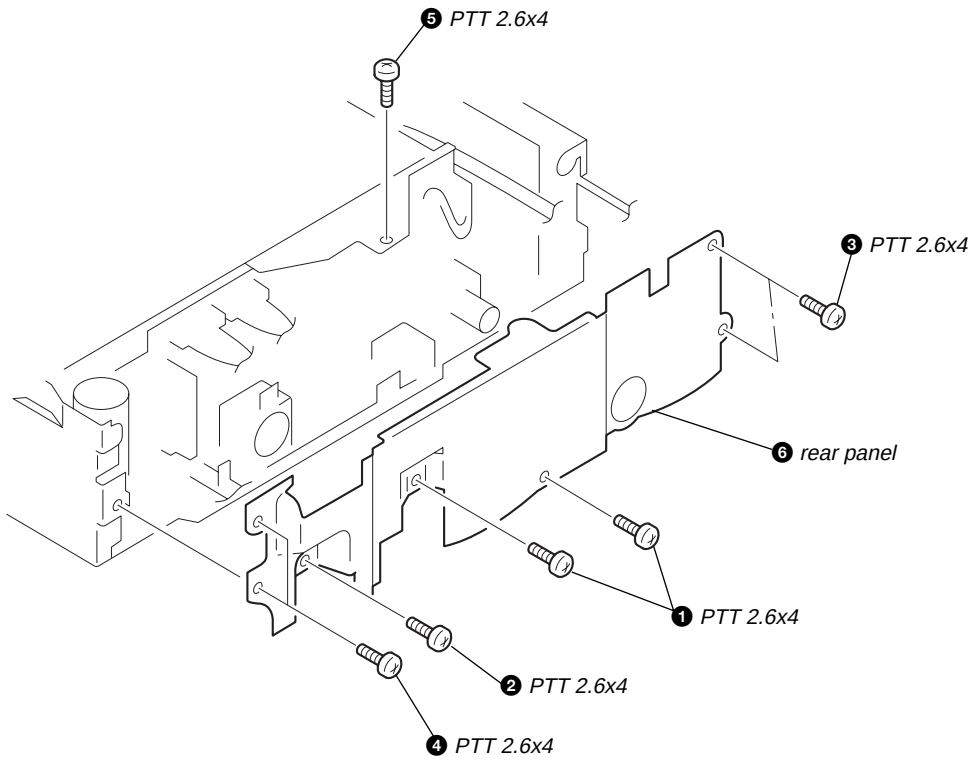
2-2. FRONT PANEL ASSY



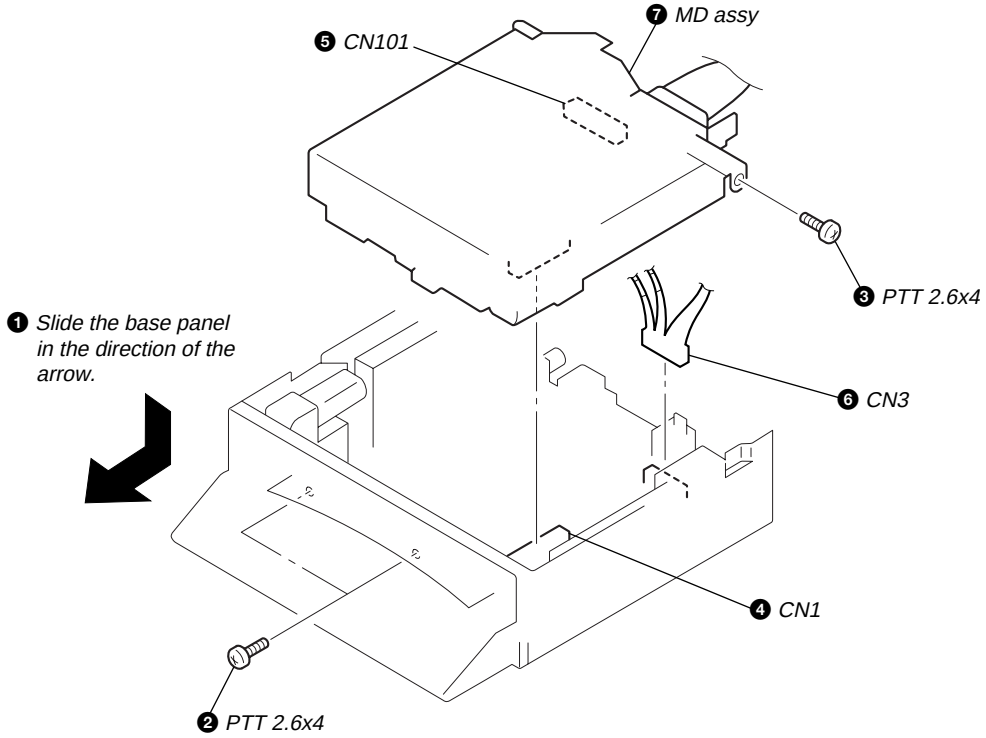
2-3. CORDS



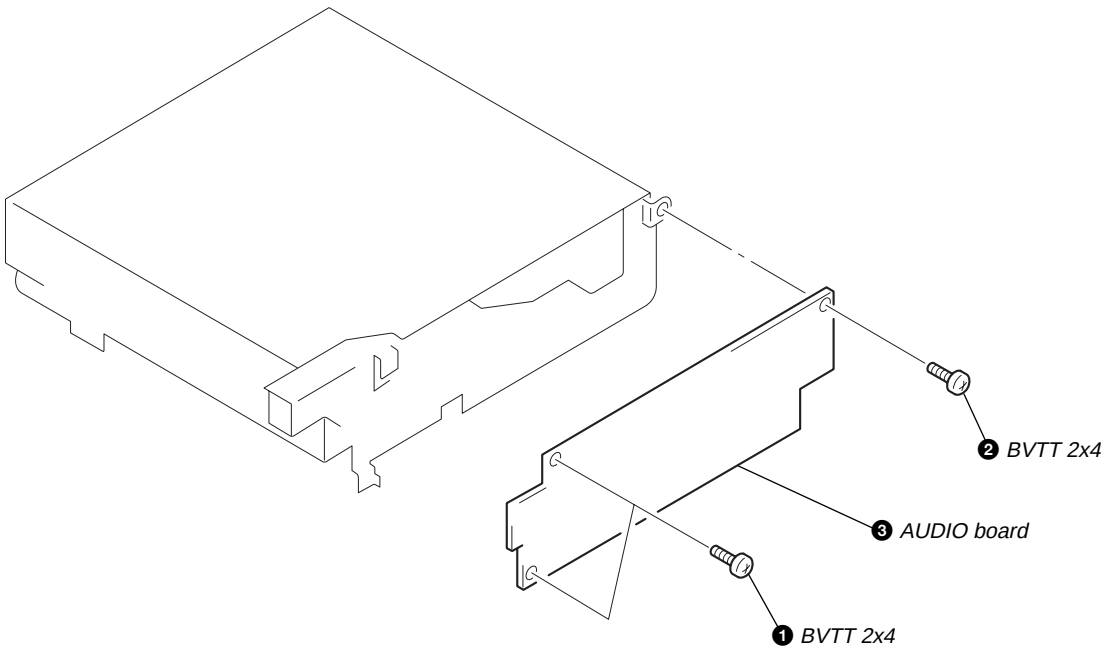
2-4. REAR PANEL



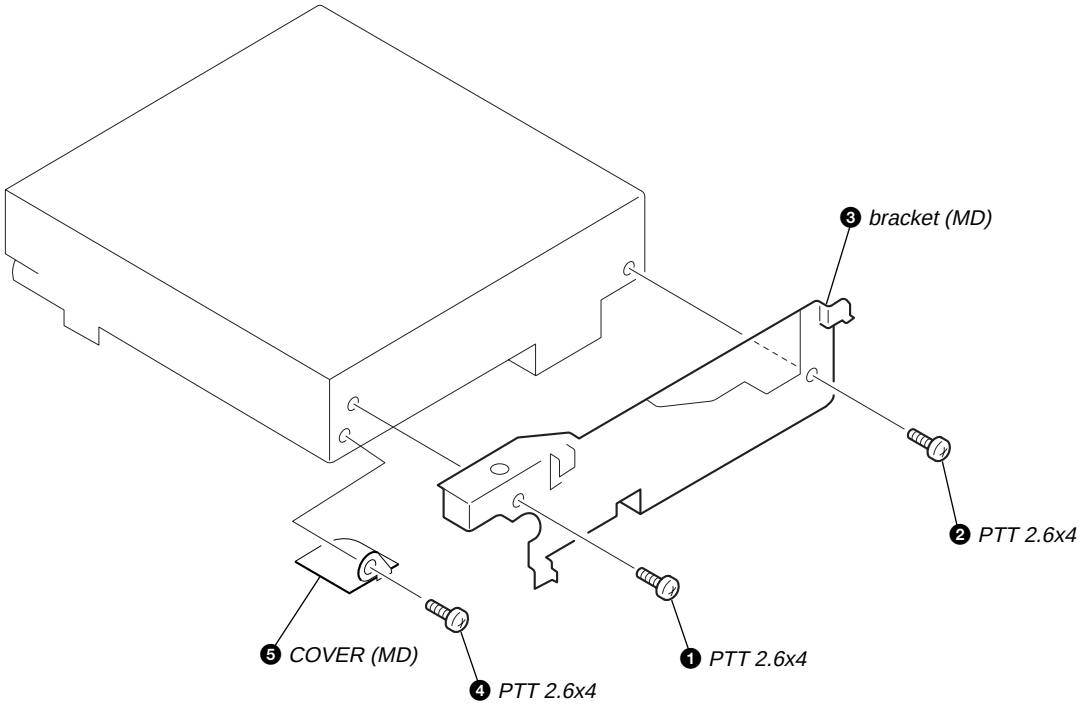
2-5. MD ASSY



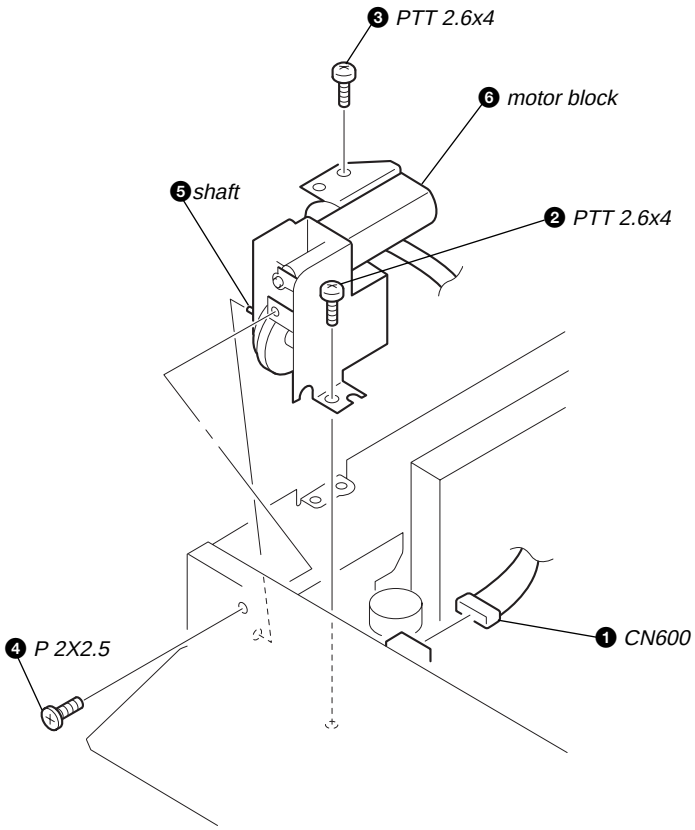
2-6. AUDIO BOARD



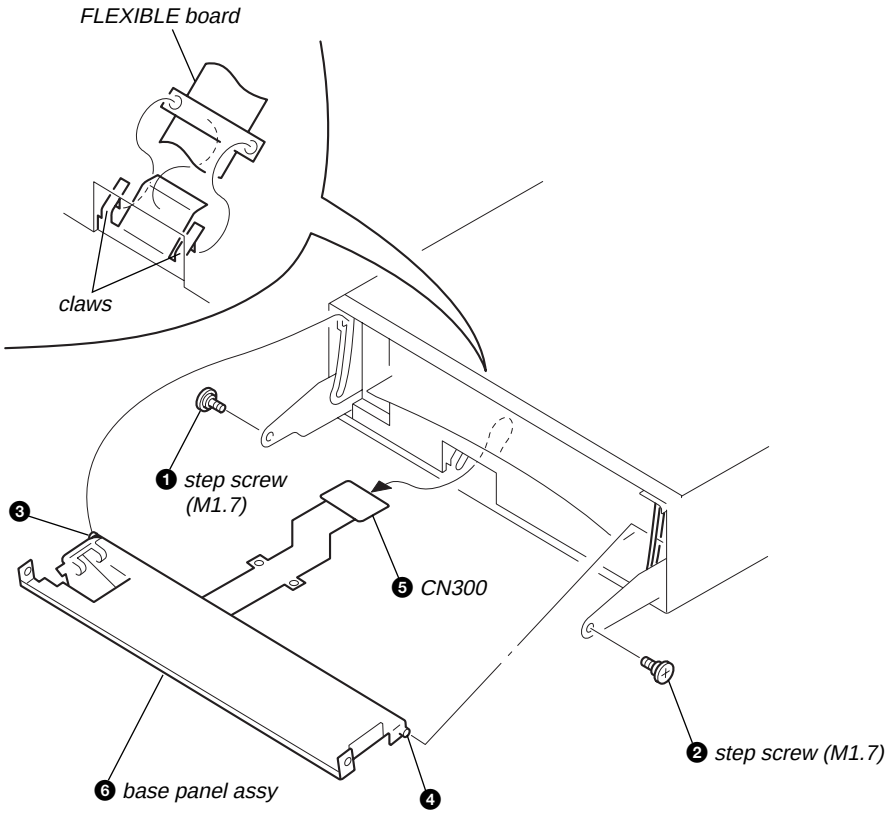
2-7. BRACKET (MD)



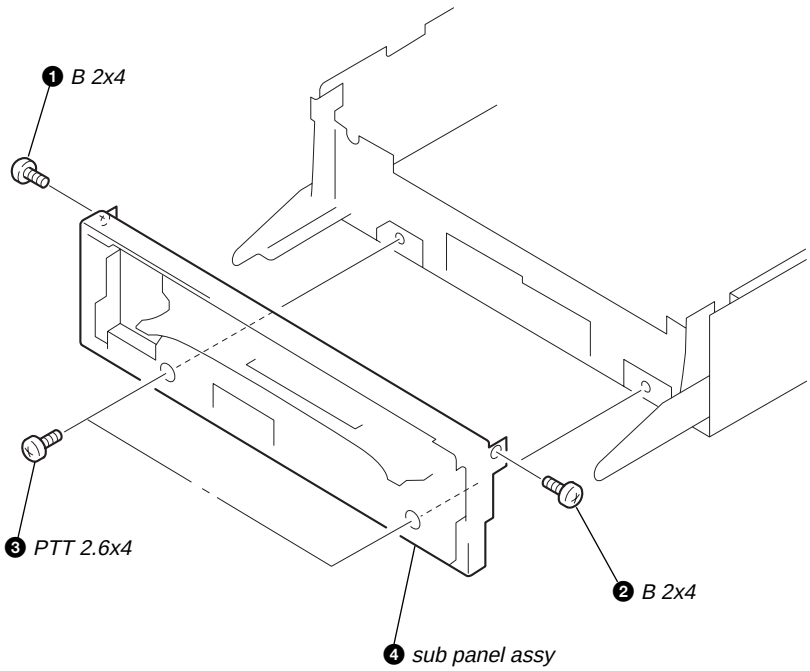
2-8. MOTOR BLOCK



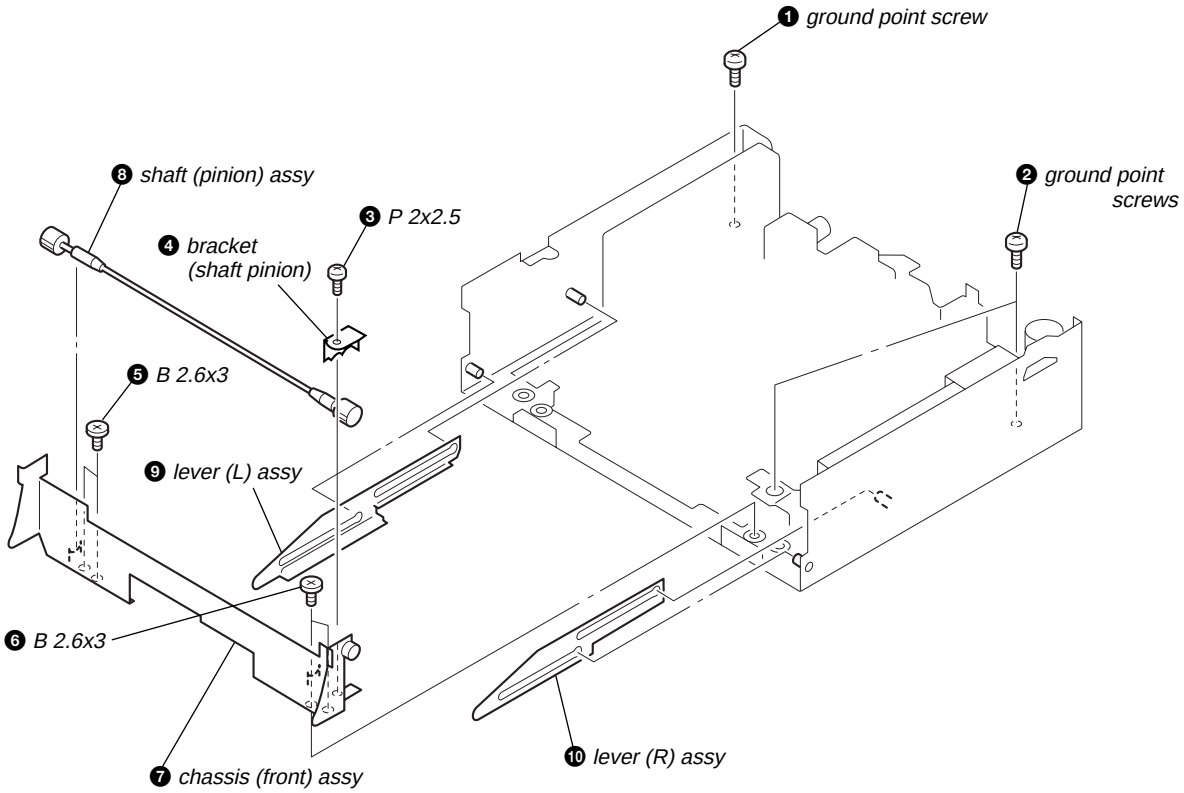
2-9. BASE PANEL ASSY



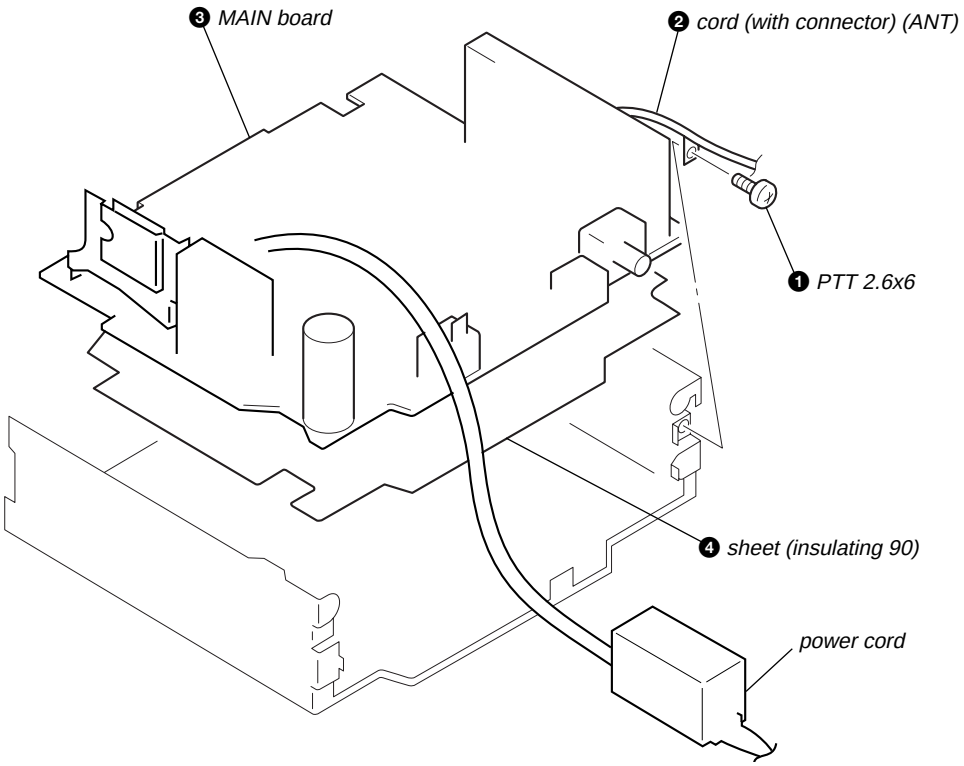
2-10. SUB PANEL ASSY



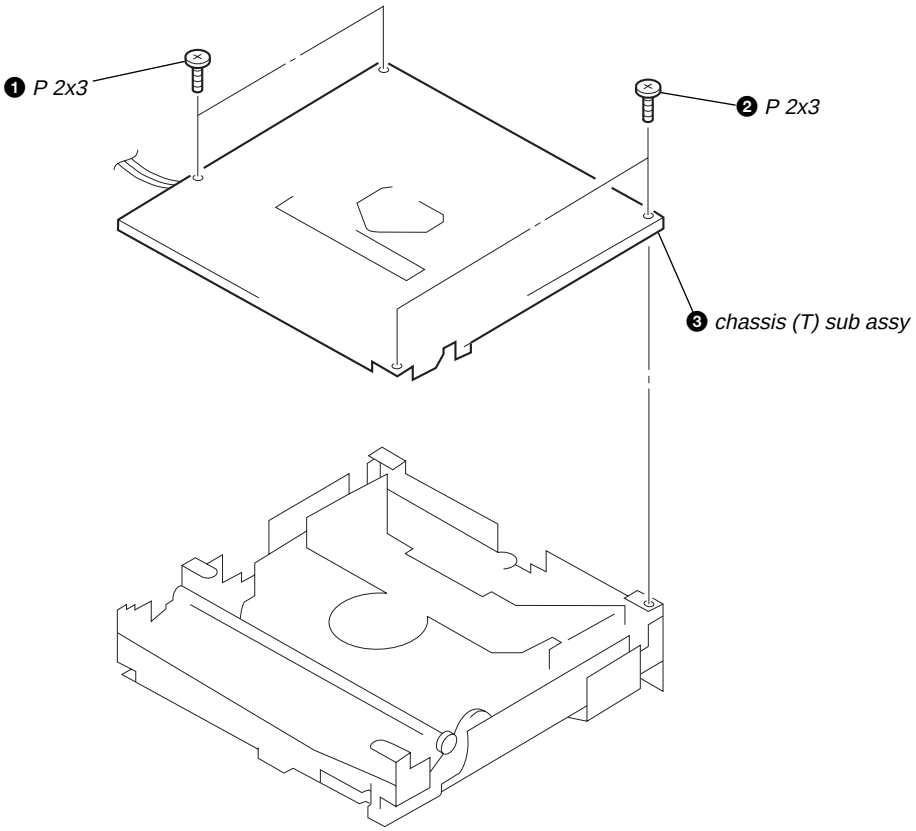
2-11. CHASSIS (FRONT) ASSY



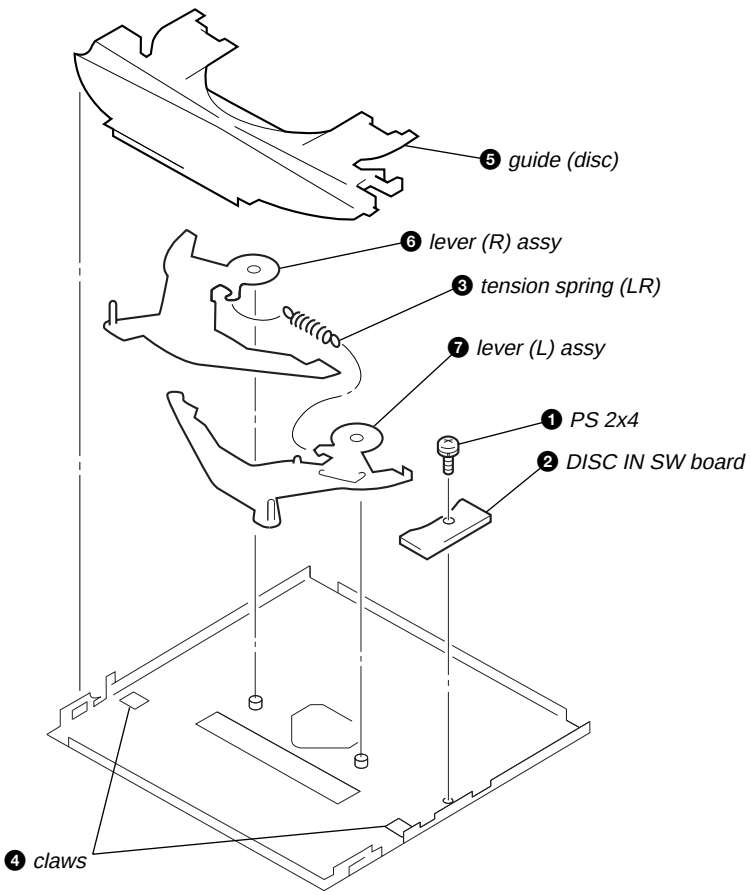
2-12. MAIN BOARD



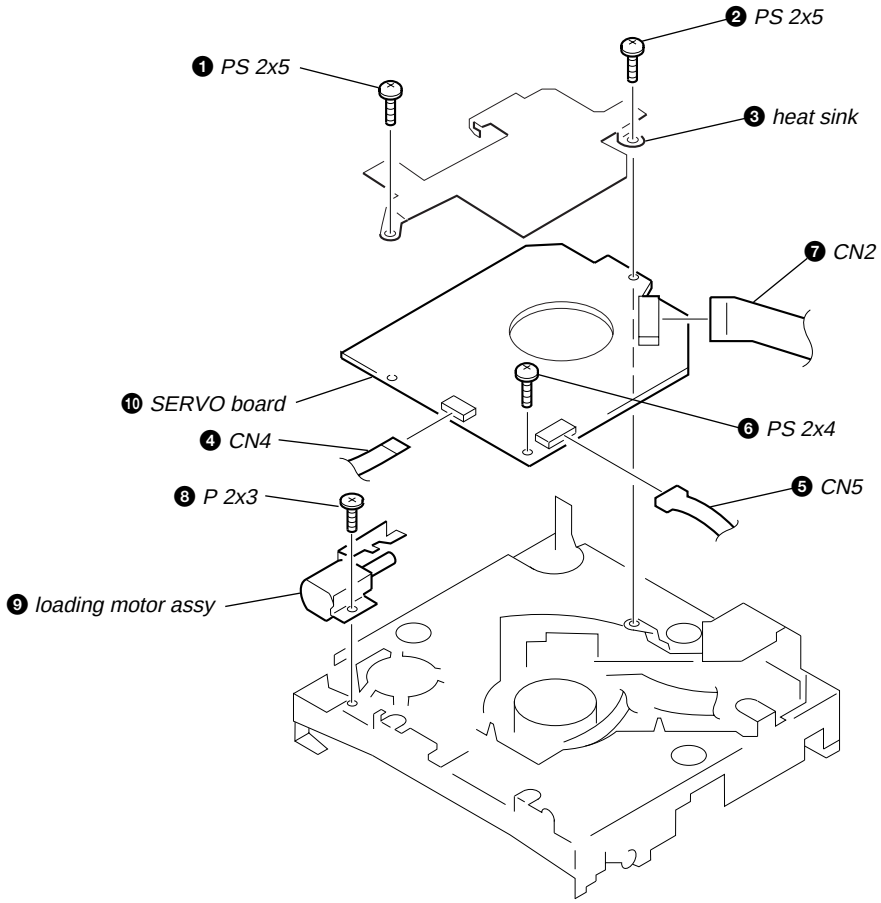
2-13. CHASSIS (T) SUB ASSY



2-14. LEVER ASSY



2-15. SERVO BOARD



2-16. ROLLER ASSY

• When installing, take note of the positions arm (roller) and washers. (Fig. 1)

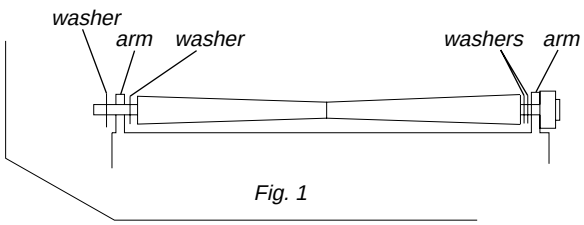
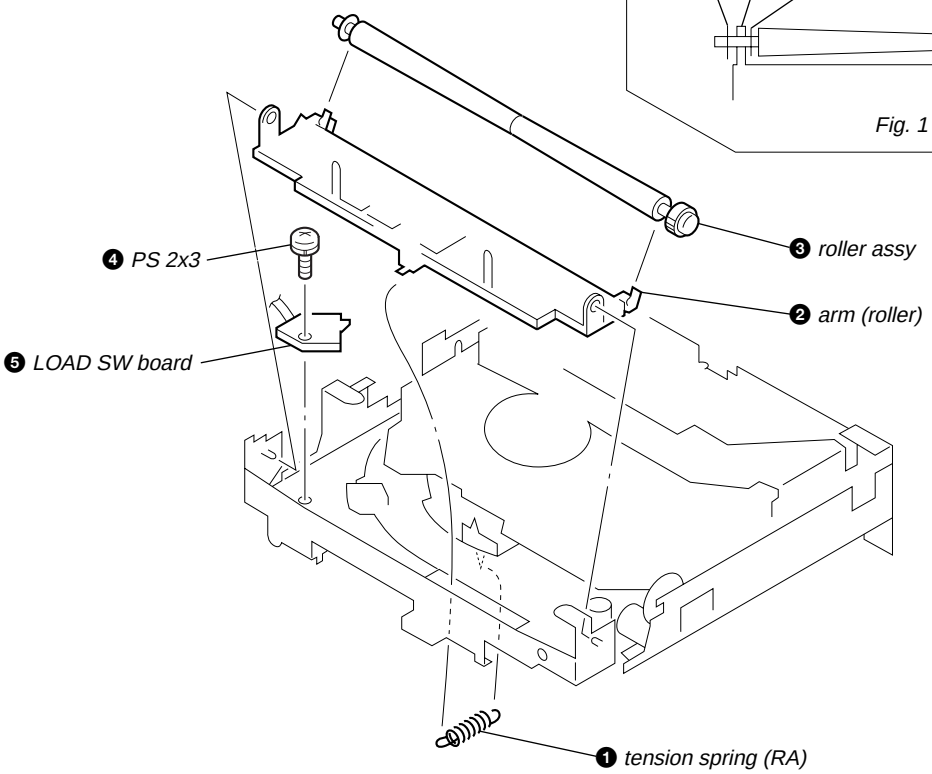
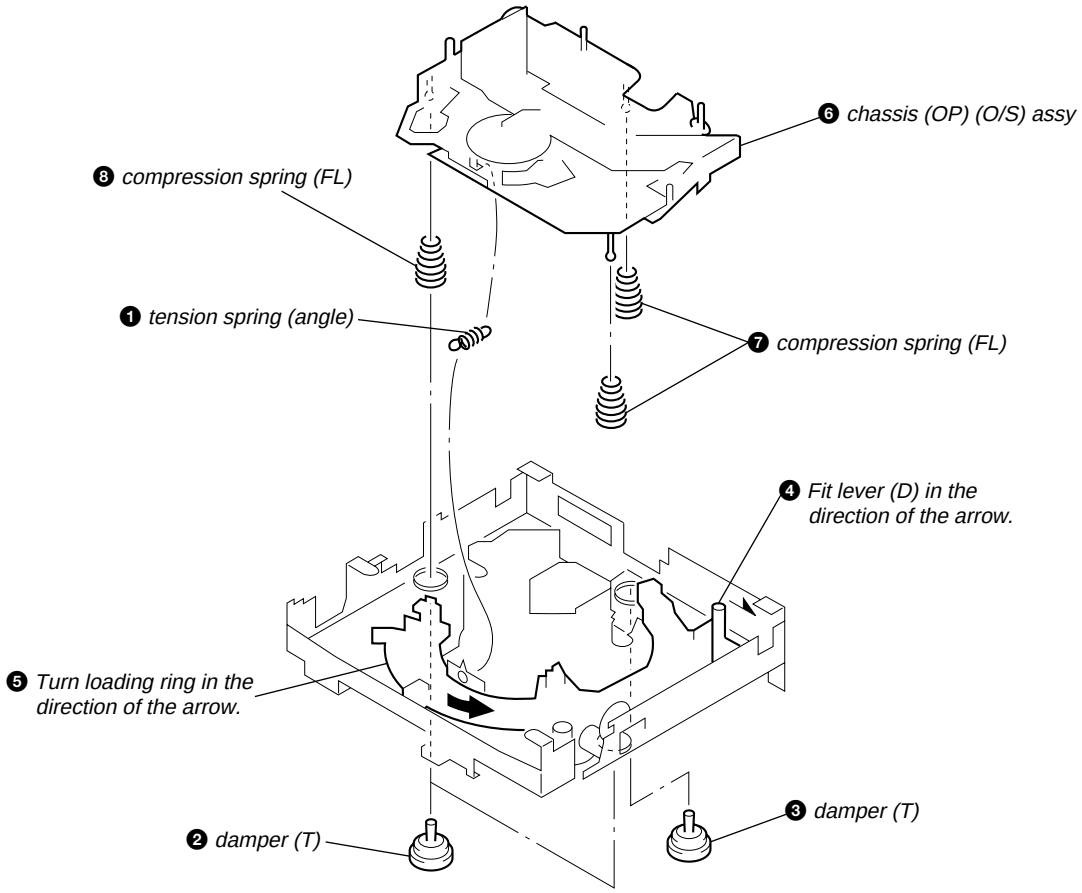


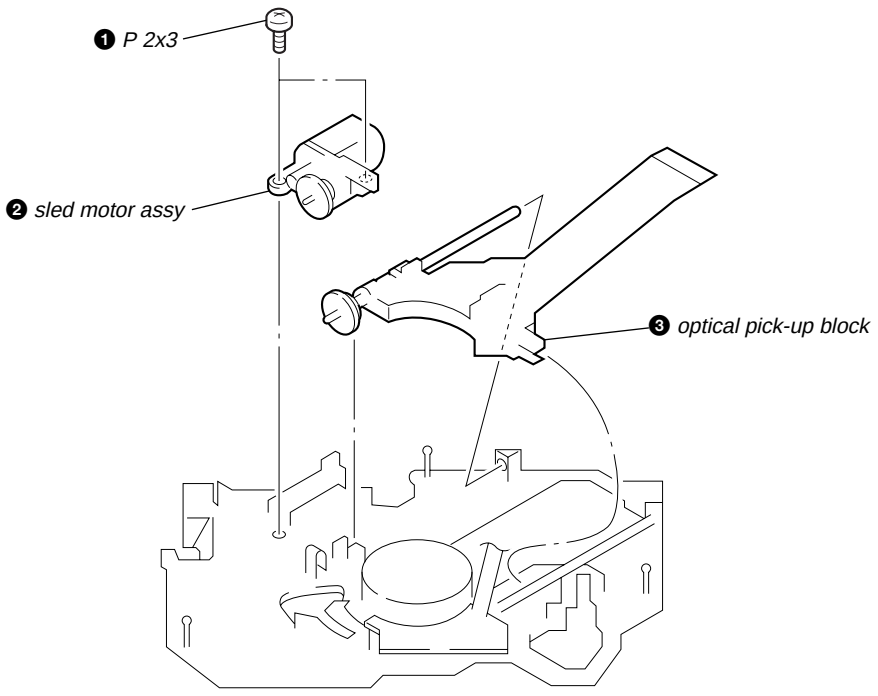
Fig. 1



2-17. CHASSIS (OP) (O/S) ASSY


❻ chassis (OP) (O/S) assy
❽ compression spring (FL)
❶ tension spring (angle)
❼ compression spring (FL)
❹ Fit lever (D) in the direction of the arrow.
❺ Turn loading ring in the direction of the arrow.
❸ damper (T)
❷ damper (T)

2-18. OPTICAL PICK-UP BLOCK



SECTION 3
ELECTRICAL ADJUSTMENTS

CD SECTION

CD section adjustments are done automatically in this set.

TUNER SECTION **0 dB = 1 μV**

Cautions during repair

When the tuner unit is defective, replace it by a new one because its internal block is difficult to repair.

TEST MODE

This set have the test mode function. In the test mode, FM Auto Scan/Stop Level and AM Auto Scan/Stop Level adjustments can be performed easier than it in ordinary procedure.

<Set the Test Mode>

1. Set the "OFF" mode.
2. Push the preset [4] button.
3. Push the preset [5] button.
4. Press the preset [1] button for more than two seconds.
5. Then the display indicates all lights, the test mode is set.

<Release the Test Mode>

1. Push the [OFF] button.

Note on Adjustment

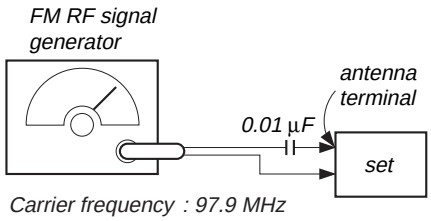
The adjustments of tuner section, should be performed according to the following sequence.

1. FM Auto Scan/Stop Level Adjustment
2. FM Stereo Separation Adjustment (WIDE)
3. FM Stereo Separation Adjustment (NARROW)
4. AM Auto Scan/Stop Level Adjustment

FM Auto Scan/Stop Level Adjustment

Setting :

SOURCE button : FM

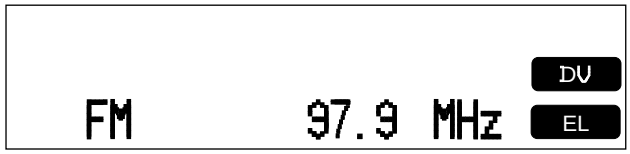


Carrier frequency : 97.9 MHz
Output level : 22 dB (12.6 μV)
Mode : mono
Modulation : 1 kHz, 22.5 kHz deviation (30%)

Procedure :

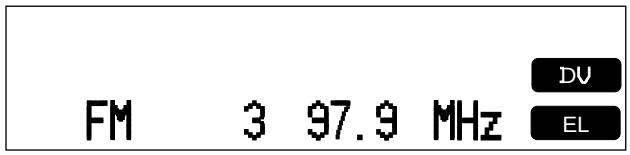
1. Set to the test mode.
2. Push the [SOURCE] button and set to FM.

Display



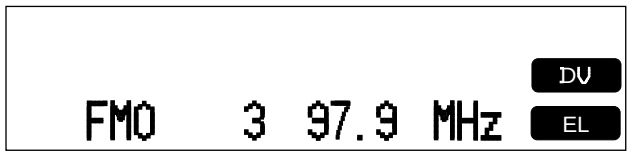
3. Push the preset [3] button.

Display



4. Adjust with the volume RV2 on TU701 so that the "FM" indication turns to "FM0" indication on the display window. But, in case of already indicated "FM0", turn the RV2 so that put out light "0" indication and adjustment.

Display

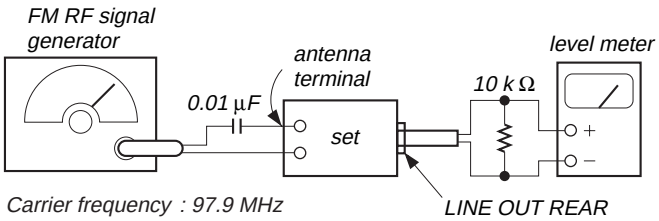


Adjustment Location : See page 46.

FM Stereo Separation Adjustment (WIDE)

Setting :

SOURCE button : FM



Carrier frequency : 97.9 MHz
Output level : 70 dB (3.2 mV)
Mode : stereo
Modulation : main : 1 kHz, 33.75 kHz deviation (45%)
sub : 1 kHz, 33.75 kHz deviation (45%)
19 kHz pilot : 7.5 kHz deviation (10%)

Procedure :

FM stereo signal generator output channel	Level meter connection	Level meter reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV3 on TU701 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV3 on TU701 for minimum reading.

L-CH stereo separation : Ⓐ – Ⓑ
R-CH stereo separation : Ⓒ – Ⓓ
The separations of both channels should be equal.

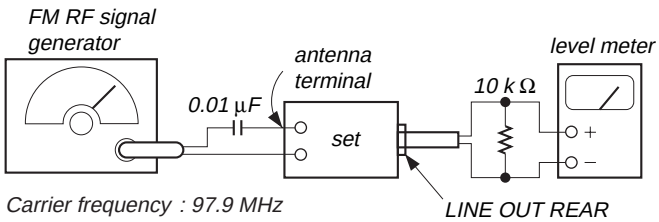
Specification : Separation more than 24 dB

Adjustment Location : See page 46.

FM Stereo Separation Adjustment (NARROW)

Setting :

SOURCE button : FM



Carrier frequency : 97.9 MHz
Output level : 70 dB (3.2 mV)
Mode : stereo
Modulation : main : 1 kHz, 33.75 kHz deviation (45%)
sub : 1 kHz, 33.75 kHz deviation (45%)
19 kHz pilot : 7.5 kHz deviation (10%)

Procedure :

1. Push the [SHIFT] button.
2. Push the [4] button three times.
3. Push the [5] button twice and set to NARROW mode.

FM stereo signal generator output channel	Level meter connection	Level meter reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV4 on TU701 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV4 on TU701 for minimum reading.

L-CH stereo separation : Ⓐ – Ⓑ
R-CH stereo separation : Ⓒ – Ⓓ
The separations of both channels should be equal.

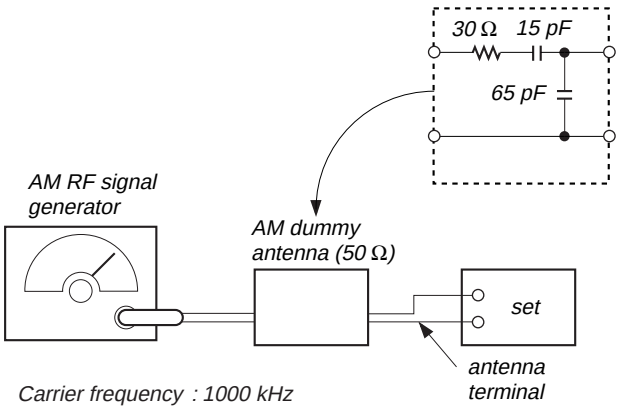
Specification : Separation more than 18 dB

Adjustment Location : See page 46.

AM Auto Scan/Stop Level Adjustment

Setting :

SOURCE ⟶ MODE button : AM

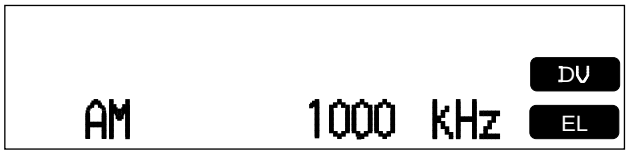


Carrier frequency : 1000 kHz
30% amplitude modulation by 1 kHz signal
output level : 33 dB (44.7 μV)

Procedure :

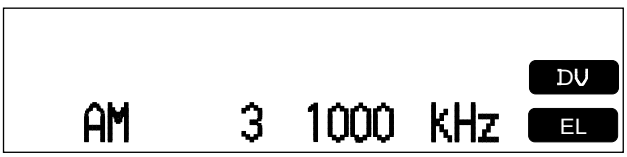
1. Set to the test mode. (See page 44.)
2. Push the SOURCE button.
3. Push the MODE button and set to AM.

Display



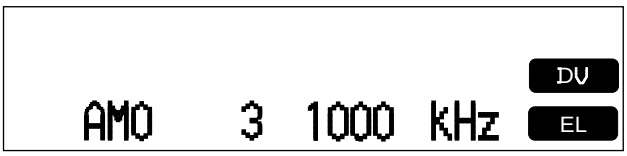
4. Push the preset 3 button.

Display



5. Adjust with the volume RV1 on TU701 so that the “AM” indication turns to “AM0” indication on the display window. But, in case of already indicated “AM0”, turn the RV1 so that put out light “0” indication and adjustment.

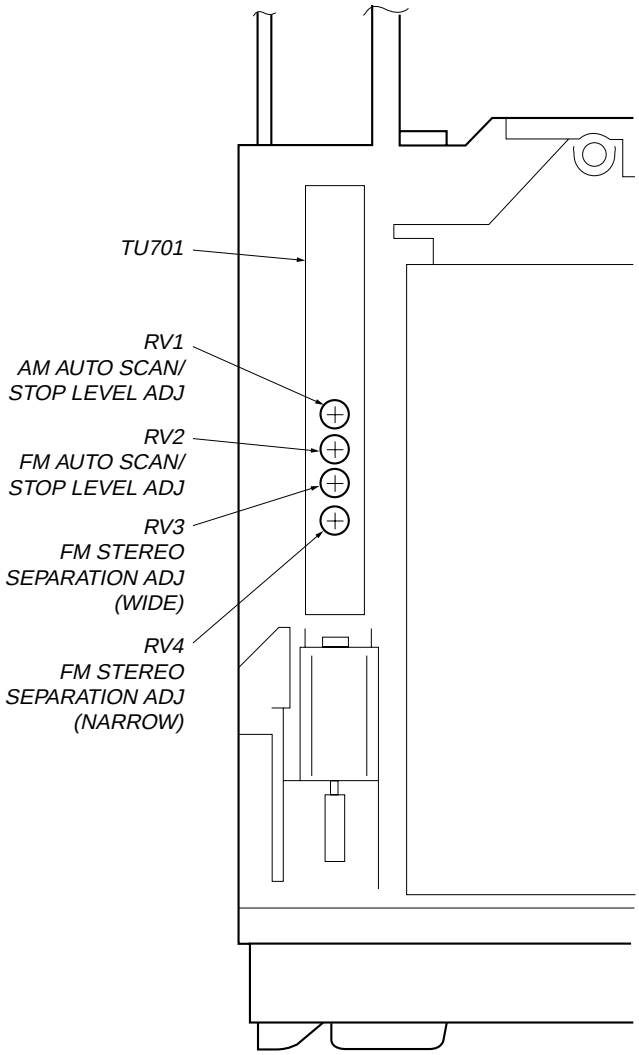
Display



Adjustment Location : tuner unit (TU701)

Adjustment Location : tuner unit (TU701)

–set upper view–



SECTION 4
DIAGRAMS

4-1. IC PIN DESCRIPTIONS

• IC5 CXP84640-011Q (CD SYSTEM CONTROL)

Pin No.	Pin Name	I/O	Pin Description
1 – 5	NCO	—	Not used in this set.
6	FP OPEN	I	Front panel open detection input
7	FP CLOSE	O	Front panel close control output
8	LINKOFF	I	Bus interface link input (Not used in this set.)
9	DRV OE	O	Focus/tracking coil/sled motor control output
10	$\overline{\text{D SW}}$	I	Down switch input (SW4)
11 – 13	NCO	—	Not used in this set.
14	LM EJ	O	Loading motor control output
15	LM LOD	O	Loading motor control output
16	EMPH O	O	De-emphasis ON/OFF control output
17	$\overline{\text{CDMON}}$	O	CD mechanism deck power control output
18	$\overline{\text{CD ON}}$	O	CD power control output
19	A MUT	O	System attenuate control output
20	$\overline{\text{LD ON}}$	O	Lazer power ON/OFF control output
21	$\overline{\text{CD RST}}$	O	CD system reset output
22 – 24	—	—	Not used in this set.
25	PH3	I	Not used in this set.
26	TSTIN0	I	Not used in this set.
27	TSTIN1	I	Not used in this set.
28	$\overline{\text{TST CLV}}$	I	Not used in this set.
29	NCO	—	Not used in this set.
30	$\overline{\text{RESET}}$	I	System reset input (“L” = Reset)
31	$\overline{\text{X IN}}$	I	X’tal oscillator input of system clock. (10 MHz)
32	$\overline{\text{X OUT}}$	O	X’tal oscillator output of system clock. (10 MHz)
33	GND	—	Analog GND
34	$\overline{\text{XT OUT}}$	O	Not used in this set.
35	$\overline{\text{XT IN}}$	I	Not used in this set.
36	AVSS	—	A/D converter GND
37	AVREF	I	A/D converter reference voltage input
38	TEP L	I	Not used in this set.
39	TEP H	I	Not used in this set.
40	NCO	—	Not used in this set.
41	PH2	I	Not used in this set.
42	SCLK	O	CD-TEXT data read clock output
43	$\overline{\text{ESPXQOK}}$	O	XQOK signal output to DRAM controller.
44	ESPSDT	I	Serial data input from DRAM controller.
45	$\overline{\text{GRSRST}}$	O	Reaet signal output to DRAM controller.
46	GRSCOR	I	Sub-cord sync input from DRAM controller.
47	CD XLAT	O	CD signal process serial latch output
48	TX CLK	O	EEPROM serial clock output
49	TX DATA	O	EEPROM serial data output
50	UNISO	O	Not used in this set.
51	BUS CLK	I/O	Bus system serial clock input/output
52	BUS SI	I	Bus system serial interface input
53	BUS SO	O	Bus system serial interface output
54	F OK	I	Focus OK signal input
55	GFS	I	GFS signal detection input
56	SCOR	O	Sub-cord sync output
57	SENS	I	SENS signal input
58	—	I	Fixed at “H” in this set.
59	CD CKO	O	CD signal process serial clock output

Pin No.	Pin Name	I/O	Pin Description
60	BU.IN	I	Back-up power detection input
61	$\overline{\text{BUSON}}$	I	Bus on control input
62	$\overline{\text{IN SW}}$	I	Disc in switch input (SW1)
63	$\overline{\text{SELF SW}}$	I	Self switch input (SW2)
64	$\overline{\text{TX CE}}$	O	EEPROM chip enable output
65	SCK2	O	Sub Q read clock output
66	SI2	I	Sub Q 80 bit, PCM peak and level data 16 bit input
67	CD DATA	O	CD signal process serial data output
68	$\overline{\text{ESPXWRE}}$	O	Write signal output to DRAM controller.
69	$\overline{\text{ESPXRDE}}$	O	Read signal output to DRAM controller.
70	$\overline{\text{ESPXLT}}$	O	Serial data latch output to DRAM controller.
71	$\overline{\text{ESPXSOE}}$	O	XSOE signal output to DRAM controller.
72	VDD	—	Power supply
73	HIN	I	Fixed at “H” in this set.
74	TEXT.ON/OFF	I	Fixed at “H” in this set.
75	PH1	I	Not used in this set.
76	FBTBSEL	I	Not used in this set.
77	$\overline{\text{CDOSEL}}$	I	Not used in this set.
78 – 80	—	—	Not used in this set.

• IC501 CXD2548R (DIGITAL SERVO, DIGITAL SIGNAL PROCESSOR)

Pin No.	Pin Name	I/O	Pin Description
1	SYSM	I	System mute input (Not used.)
2	RMUT1	O	R-ch, “0” detection output. (“H” : ON, “L” : OFF) (Not used.)
3	LMUT2	O	L-ch, “0” detection output. (“H” : ON, “L” : OFF) (Not used.)
4	CKOUT	O	Master clock frequency division output (Not used.)
5	VDD0	—	Digital power supply
6	SBSO	O	Serial output of sub-P to W.
7	EXCK	I	Clock input for SBSO read output.
8	SQCK	I	Clock input for SQSO read output.
9	SQSO	O	SubQ 80 bit, PCM peak and level data 16 bit output.
10	SENS	O	SENS output. Output to CPU.
11	SCLK	I	Clock input for SENS real data read.
12	DATA	I	Serial data input from CPU.
13	XLAT	I	Latch input from CPU. Latch serial data at the falling edge.
14	CLOK	I	Serial data transfer clock input from CPU.
15	XRST	I	System reset (“L” : Reset)
16	ACDT	O	Not used.
17	PWM1	I	External control input of spindle motor.
18	XLON	O	Microcomputer extension interface (Output) (Not used.)
19	SPOA	I	Microcomputer extension interface (Input A) (Not used.)
20	WFCK	O	WFCK (Write Flame Clock) output
21	GTOP	O	GTOP output
22	XUGF	O	XUGF output (Not used.)
23	XPCK	O	XPLCK output (Not used.)
24	GFS	O	GFS output
25	RFCK	O	RFCK output
26	C2PO	O	C2PO output (Not used.)
27	XROF	O	XROF output
28	SCOR	O	“H” output at either detection, sub code sync S0 or S1.
29	MNT0	O	MNT0 output (Not used.)
30	MNT1	O	MNT1 output (Not used.)
31	MNT3	O	MNT3 output (Not used.)
32	VSS1	—	Digital GND
33	DOUT	O	Digital-Out output
34	ATSK	I	For anti-shock.
35	MIRR	O	Mirror signal output (Not used.)
36	DFCT	O	Diffect signal output (Not used.)
37	FOK	O	Focus OK signal output
38	VDD1	—	Digital power supply
39	VPCO1	O	Charge pump output for wideband EFM PLL.
40	VPCO2	O	VCO2 charge pump output for wideband EFM PLL.
41	VCK.I	I	VCO2 oscillator input for wideband EFM PLL.
42	V16M	O	VCO2 oscillator output for wideband EFM PLL.
43	VCTL	I	VCO2 control input for wideband EFM PLL.
44	PCO	O	Charge pump output for master PLL.
45	FILO	O	Filter output for master PLL (Slave = digital PLL).
46	FILI	I	Filter input for master PLL.
47	AVSS4	—	Analog GND
48	CLTV	I	VCO control voltage input for master.
49	AVDD4	—	Analog power supply
50	RFAC	I	EFM signal input
51	BIAS	I	Asymmetry circuit constant current input
52	ASY.I	I	Asymmetry comparate voltage input

Pin No.	Pin Name	I/O	Pin Description
53	ASY.O	O	EFM full-swing output (“L” : VSS, “H” : VDD)
54	VC	I	Center voltage input
55	FE	I	Focus error signal input
56	SE	I	Sled error signal input
57	TE	I	Tracking error signal input
58	CE	I	Center error signal input
59	RFDC	I	RF signal input
60	RFC	I	Condenser connection pin for LPF time constant of RF signal.
61	ADIO	O	OP amplifier output (Not used.)
62	AVSS3	—	Analog GND
63	IGEN	I	Current source reference resistor connection for OP amplifier.
64	AVDD3	—	Analog power supply
65, 66	TES2, 3	I	TEST pin (Fixed at “L”.)
67	VSS2	—	Digital GND
68	TEST	I	TEST pin (Fixed at “L”.)
69	SFDR	O	Sled drive output
70	SRDR	O	Sled drive output
71	TFDR	O	Tracking drive output
72	TRDR	O	Tracking drive output
73	FFDR	O	Focus drive output
74	FRDR	O	Focus drive output
75	VDD2	—	Digital power supply
76	COUT	O	Track number count signal output (Not used.)
77	LOCK	O	Not used.
78	MDS	O	Servo control output of spindle motor. (Not used.)
79	MDP	O	Servo control output of spindle motor.
80	SSTP	I	Disc most inner track detection signal input
81	FSTO	O	2/3 frequency division output of pins 103 and 104.
82	FSTI	I	Reference clock input for digital servo.
83	XTSL	I	X’tal select input (“L” : 16.9344 MHz)
84	C4M	O	4.2336 MHz output
85	WDCK	O	D/A interface. Word clock f = 2Fs
86	VDD3	—	Digital power supply
87	LRCK	O	D/A interface. LR clock f = Fs
88	LRCKI	I	LR clock input to DAC. (48 bit slot) (Not used.)
89	PCMD	O	D/A interface. Serial data (2’s COMP, MSB first)
90	PCMDI	I	Audio data input to DAC. (48 bit slot) (Not used.)
91	BCK	O	D/A interface. Bit clock
92	BCKI	I	Bit clock input to DAC. (48 bit slot) (Not used.)
93	EMPH	O	Not used.
94	EMPHI	I	De-emphasis ON/OFF of DAC. (“H” : ON, “L” : OFF) (Not used.)
95	VSS3	—	Digital GND
96	AVSS1	—	L-ch, Analog GND.
97	AVDD1	—	L-ch, Analog power supply.
98	AOUT1	O	L-ch, Analog output. (Not used.)
99	AIN1	I	L-ch, OP amplifier input. (Not used.)
100	LOUT1	O	L-ch, LINE output. (Not used.)
101	AVSS1	—	L-ch, Analog GND.
102	XVDD	—	Analog power supply for master clock.
103	XTAI	I	X’tal oscillator input of master clock (16.9344 MHz).
104	XTAO	O	X’tal oscillator output of master clock. (Not used.)
105	XVSS	—	Analog GND for master clock.
106	AVSS2	—	R-ch, Analog GND.

Pin No.	Pin Name	I/O	Pin Description
107	ROUT2	O	R-ch, LINE output. (Not used.)
108	AIN2	I	R-ch, OP amplifier input. (Not used.)
109	AOUT2	O	R-ch, Analog output. (Not used.)
110	AVDD2	—	R-ch, Analog power supply.
111	AVSS2	—	R-ch, Analog GND.
112	VSS0	—	Digital GND

• IC300 MB90F574PFV-G-139-BND (SYSTEM CONTROL)

Pin No.	Pin Name	I/O	Pin Description
1	TIR WR	O	TIR IC data write output (Not used in this set.)
2	TIR RD	O	TIR IC data read output (Not used in this set.)
3	TIR CE	O	TIR IC data chip enable output (Not used in this set.)
4	$\overline{\text{TIR CE}}$	O	XTIR IC data chip enable output (Not used in this set.)
5	TIR BUSY	I	TIR IC busy input (Not used in this set.)
6	TIR PDOWN	O	TIR IC power down output (Not used in this set.)
7	DIVER	O	FM diversity ON/OFF output (Not used in this set.)
8	VCC	—	Power supply pin (+5 V)
9	AF SEEK	O	AF SEEK output (Not used in this set.)
10	WIDE	O	WIDE/NARROW select output
11	CAUTION	I	Caution alarm setting (Fixed at “H” in this set.)
12	$\overline{\text{NOSE SW}}$	I	Nose detection input
13	COLOR	O	Color control output (“H”:green, “L”:amber)
14	$\overline{\text{BUSON}}$	O	Bus ON control output
15	BEEP	O	BEEP output
16	TIR RES	O	TIR IC reset (Power down) output (Not used in this set.)
17	DF LAT	O	Digital filter latch output
18	DF SO	O	Digital filter serial data output
19	DF CKO	O	Digital filter clock output
20	UNISI	I	Serial data input (for UNI LINK)
21	UNISO	O	Serial data output (for UNI LINK)
22	UNICK	O	Serial clock output (for UNI LINK)
23	NCO	—	Not used.
24	SIRCS	I	Remote commander input
25	PLLSI	I	PLL data input
26	PLLSO	O	PLL data output
27	PLLCKO	O	PLL clock output
28	PLL CE	O	PLL chip enable output
29	P MOT+	O	Front panel motor control (+) output
30	P MOT–	O	Front panel motor control (–) output
31	I DET	I	Panel motor lock detection input
32	POS0	I	Position detection input 0 (Open end)
33	GND	—	GND
34	C	—	Power stabilization capacitor pin
35	POS1	I	Position detection input 1 (Close end)
36	POS2	I	Position detection input 2 (10 DEG.)
37	POS3	I	Position detection input 3 (20 DEG.)
38	DVCC	—	D/A converter VREF input
39	DVSS	—	GND of D/A converter.
40	MOTREF	O	Motor reference voltage output
41	LCDANG	O	LCD view angle adjustment analog output
42	AVCC	—	Analog power supply pin (+5 V)
43	AVRH	—	A/D converter VREF+ input
44	AVRL	—	A/D converter VREF– input
45	AVSS	—	Analog GND
46	DSTSEL0	I	Destination select input 0 (Fixed at “H” in this set.)
47	H TEMP	I	High templature detection analog input (Fixed at “H” in this set.)
48	L TEMP	I	Low templature detection analog input (Fixed at “H” in this set.)
49	MPT	I	Tuner multi-pass input (Not used in this set.)
50	VSM	I	S-Meter voltage detection input
51	RC IN0	I	Rotary commander input 0
52, 53	KEYIN0, 1	I	Key input 0, 1

Pin No.	Pin Name	I/O	Pin Description
54	VCC	—	Power supply pin (+5 V)
55	RAMBU	I	RAM reset detection input
56	$\overline{\text{TESTIN}}$	I	Test mode setting detection input
57	$\overline{\text{AD ON}}$	O	Power control output of A/D conversion.
58, 59	RE IN0, 1	I	Rotary encoder input 0, 1
60	$\overline{\text{BOOT}}$	I	Compulsory boot mode input
61	DIMMER	O	Dimmer control output
62	TIR IND	O	TIR indicator control output (Not used in this set.)
63	GND	—	GND
64	$\overline{\text{SYSRST}}$	O	System reset output
65, 66	NCO	—	Not used.
67	EEDATA	I/O	EEPROM serial data input/output
68	EECLK	O	EEPROM serial clock output
69	NCO	—	Not used.
70	RDSSI	I	RDS serial clock input (Not used in this set.)
71	RDSCKO	I	RDS serial data input (Not used in this set.)
72	DAVN	I	RDS IC data taking in detection input (Not used in this set.)
73	X0A	—	Low speed oscillation input (32.768 kHz)
74	X0B	—	Low speed oscillation input (32.768 kHz)
75	RC IN1	I	Rotary commander input
76	BU IN	I	Back-up power detection input
77	KEY ACK	I	Key input acknowledge
78	$\overline{\text{ILLIN}}$	I	Illumination line detection input
79	TEL ATT	I	Telephone mute detection input
80	NCO	—	Not used.
81	$\overline{\text{ACC IN}}$	I	Accessory power detection input
82	EMPH I	I	Emphasis input
83	FP CLOSE	I	Front panel close detection input
84	FP OPEN	O	Front panel open control output
85	BOOT DP	O	Display controller boot mode control output
86	HSTX	—	Connect to power supply pin.
87	MD2	—	Connect to GND.
88, 89	MD0, 1	—	Connect to power supply pin.
90	$\overline{\text{RESET}}$	I	Microcomputer reset input
91	VSS	—	GND
92	X0	—	High speed oscillation input (3.68 MHz)
93	X1	—	High speed oscillation input (3.68 MHz)
94	VCC	—	Power supply pin (+5 V)
95	TIMPOL	O	Time poling setting (Fixed at “H” in this set.)
96	PW ON	O	System power control output
97	ILL ON	O	Illumination power control output
98	DIRECT	O	Direct volume control output
99	ATT	O	System mute control output
100	ANTREM	O	Antenna remote control output
101	VOLCE0	O	Input selector/tone/sub volume serial chip enable output
102	VOLCE1	O	Electric volume serial chip enable output (L-CH)
103	VOLCE2	O	Electric volume serial chip enable output (R-CH)
104	VOLCKO	O	Volume serial clock output
105	VOLSO	O	Volume serial data output
106	ENC+	I	Rotary commander and encoder input (+)
107	ENC–	I	Rotary commander and encoder input (–)
108	FM ON	O	FM ON control output
109	AM ON	O	AM ON control output

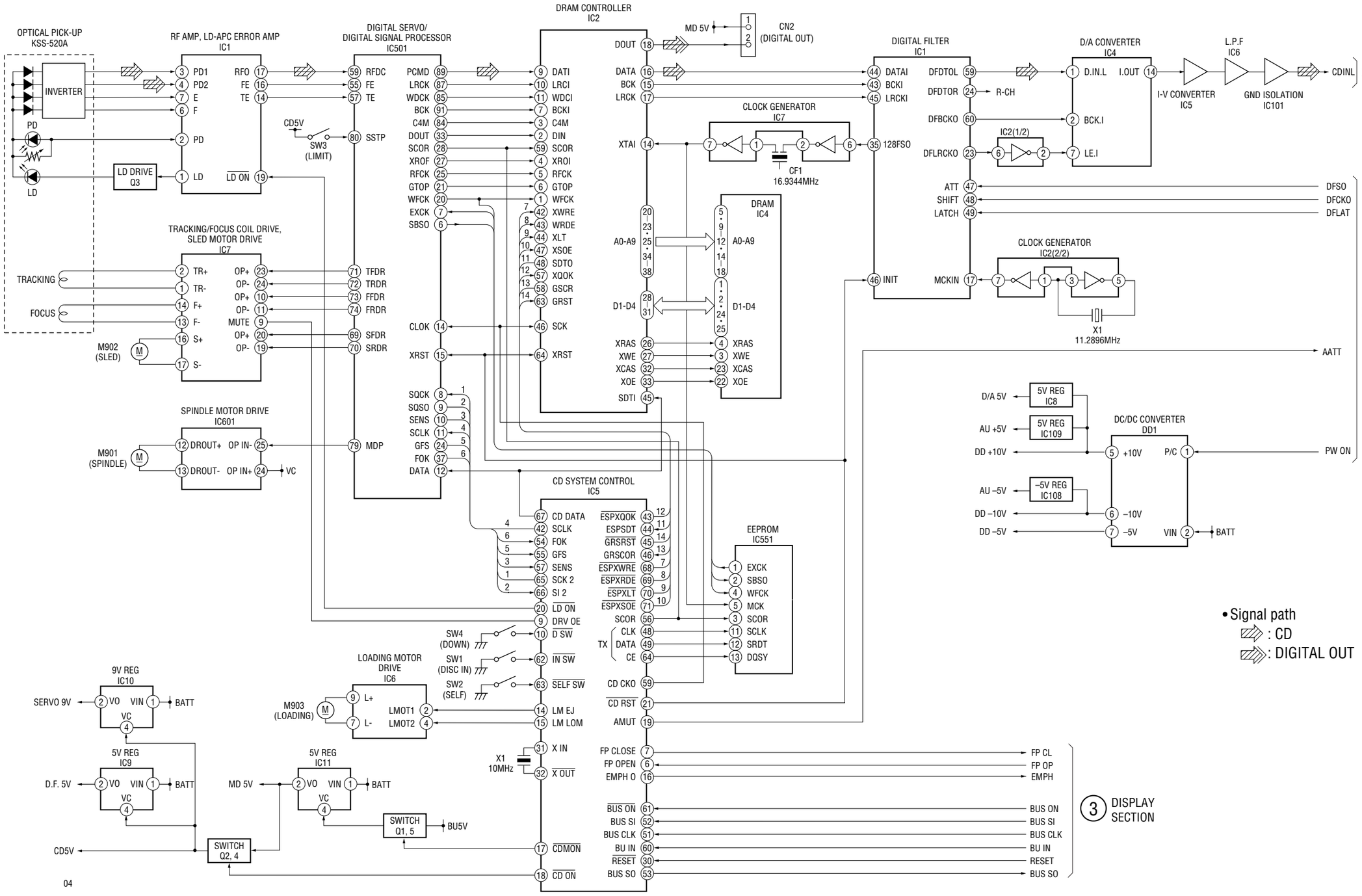
Pin No.	Pin Name	I/O	Pin Description
110	SEEKOUT	O	SEEK OUT output
111	AM STIN	I	AM stereo input (Not used in this set.)
112	FM STIN	I/O	Used in conjunction with stereo input/monaural output (FM mode)
113	SD IN	I	Signal detector input
114	TU ATT	O	Tuner mute output (Not used in this set.)
115	TIR D0	I/O	TIR IC data 0 input/output (Not used in this set.)
116	TIR D1	I/O	TIR IC data 1 input/output (Not used in this set.)
117	TIR D2	I/O	TIR IC data 2 input/output (Not used in this set.)
118	TIR D3	I/O	TIR IC data 3 input/output (Not used in this set.)
119	VSS	—	GND
120	TIRPLAY	O	TIR IC play mode audio select control output (Not used in this set.)

• IC500 HD6413002F16 (DISPLAY CONTROL)

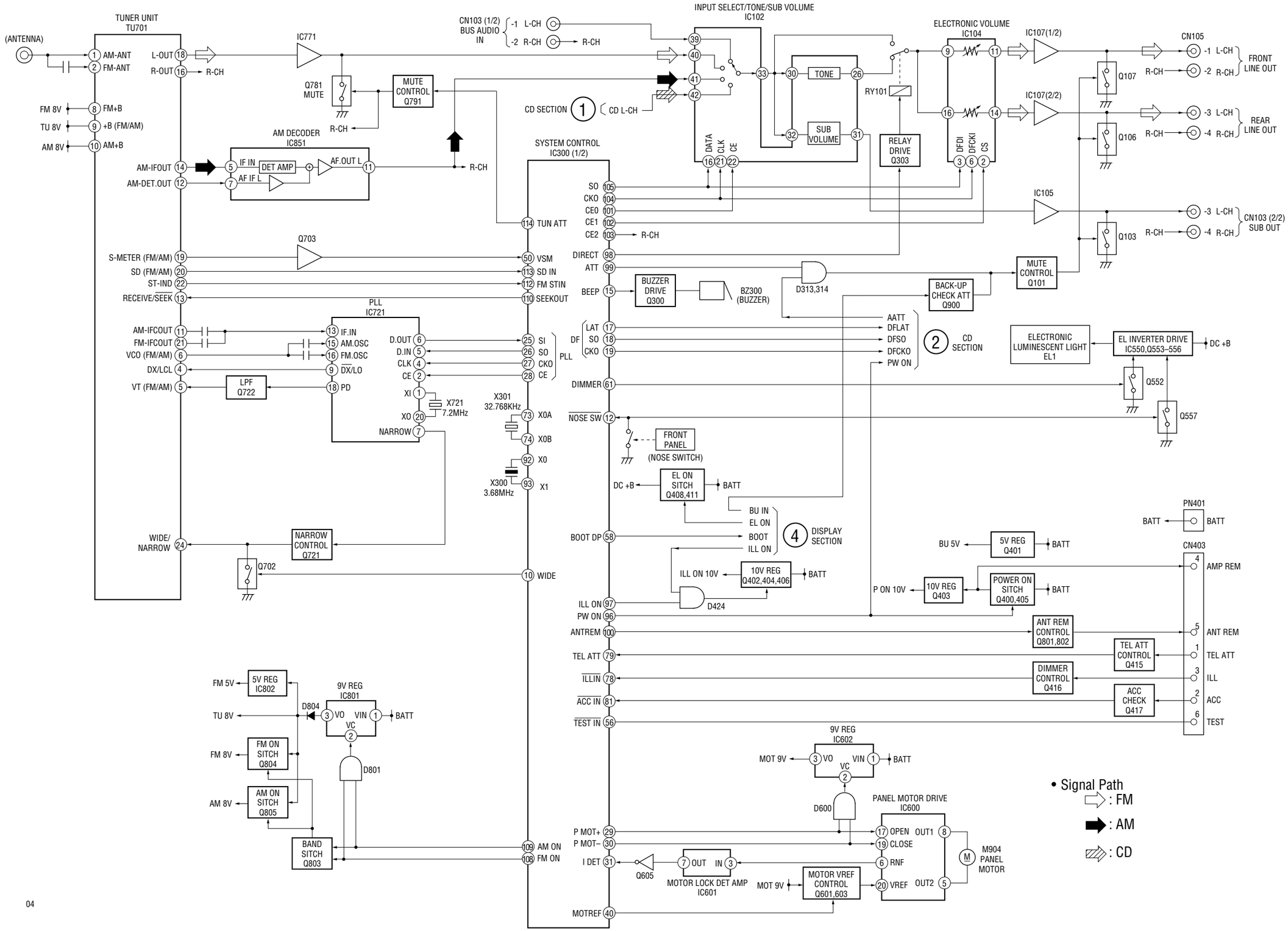
Pin No.	Pin Name	I/O	Pin Description
1	VDD	—	Power supply pin (+5 V)
2	SIRCS	I	Remote commander input
3	SIRCS	I	Remote commander input
4	$\overline{\text{LCD-RST}}$	O	LCD controller reset control output
5	ILL ON	O	LCD controller power supply control output
6	EL ON	O	LCD back light EL power supply control output
7	LCD-ST	O	LCD controller information start request signal output
8	CS-CTL	O	SRAM master chip enable control output
9	BOOTI	I	Compulsory boot mode input
10	(RESO)	O	Connect to GND.
11	VSS	O	GND
12	LCD-SO	O	LCD controller serial data output
13	UNI-SO	O	BUS interface data output
14	LCD-RX	I	LCD controller serial data input
15	UNI-SI	I	BUS interface data input
16	UNI-CO	O	LCD controller serial clock ouput
17	UNI-CI	I	LCD controller serial clock input
18 – 21	D0 – D3	I/O	External RAM, ROM data bus input/output
22	VSS	—	GND
23 – 34	D4 – D15	I/O	External RAM, ROM data bus input/output
35	VDD	—	Power supply pin (+5 V)
36 – 43	A0 – A7	O	External RAM, ROM address bus output
44	VSS	—	GND
45 – 56	A8 – A19	O	External RAM, ROM address bus output
57	VSS	—	GND
58	$\overline{\text{WAIT}}$	O	Not used.
59	(P61)	—	Not used.
60	(P62)	—	Not used.
61	NC	—	Not used.
62	$\overline{\text{STBY}}$	I	Hardware standby input (Fixed at “H”.)
63	$\overline{\text{SYSRST}}$	I	Reset input
64	BU-IN	I	Back-up power detection input
65	VSS	—	GND
66	EXTAL	O	Oscillation output (14.74 MHz)
67	XTAL	I	Oscillation input (14.74 MHz)
68	VDD	—	Power supply pin (+5 V)
69	$\overline{\text{AS}}$	—	Not used.
70	$\overline{\text{RD}}$	O	Read signal output
71	$\overline{\text{HWR}}$	O	High write signal output
72	$\overline{\text{LWR}}$	O	Low write signal output
73	MD0	I	Microcomputer oparation mode input (Fixed at “L”.)
74	MD1	I	Microcomputer oparation mode input (Fixed at “L”.)
75	MD2	I	Microcomputer oparation mode input (Fixed at “H”.)
76	AVDD	I	A/D converter power supply input
77	VREF	I	A/D converter reference voltage input
78 – 83	(AN0 – AN5)	—	Connect to GND.
84	BU-IN	I	Back-up power detection input
85	PBS	I	Parking brake input
86	AVSS	—	A/D converter GND
87	$\overline{\text{BUS-ON}}$	I	BUS-interface BUS-ON input
88	$\overline{\text{SRAM-CS}}$	O	SRAM chip enable output
89	$\overline{\text{DEC-CS}}$	O	Demodulator LSI chip enable output (Not used in this set.)

Pin No.	Pin Name	I/O	Pin Description
90	$\overline{\text{DEC-INT}}$	O	Demodulator LSI initial output (Not used in this set.)
91	$\overline{\text{ROM-CS}}$	O	PROM chip enable output
92	VSS	—	GND
93	UNI-REQ	O	Not used.
94	LINK-OFF	O	BUS interface link output
95	DEC-ON	O	Not used.
96	$\overline{\text{DEC-CLR}}$	O	Demodulator LSI reset output (Not used in this set.)
97 – 99	A21 – A23	O	Not used.
100	A20	O	External RAM, ROM address bus output

4-2. BLOCK DIAGRAM — CD SECTION —



4-3. BLOCK DIAGRAM — MAIN SECTION —



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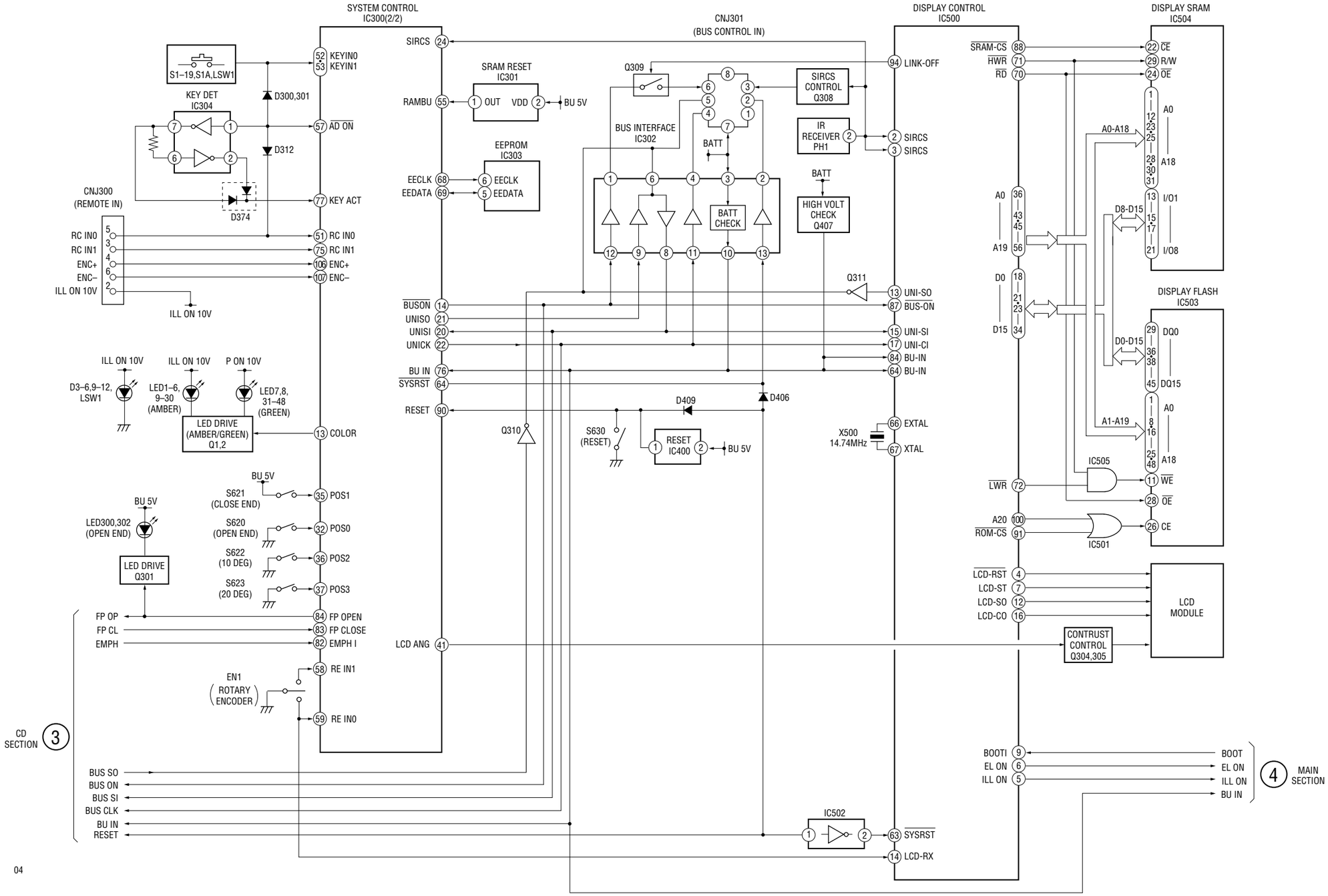
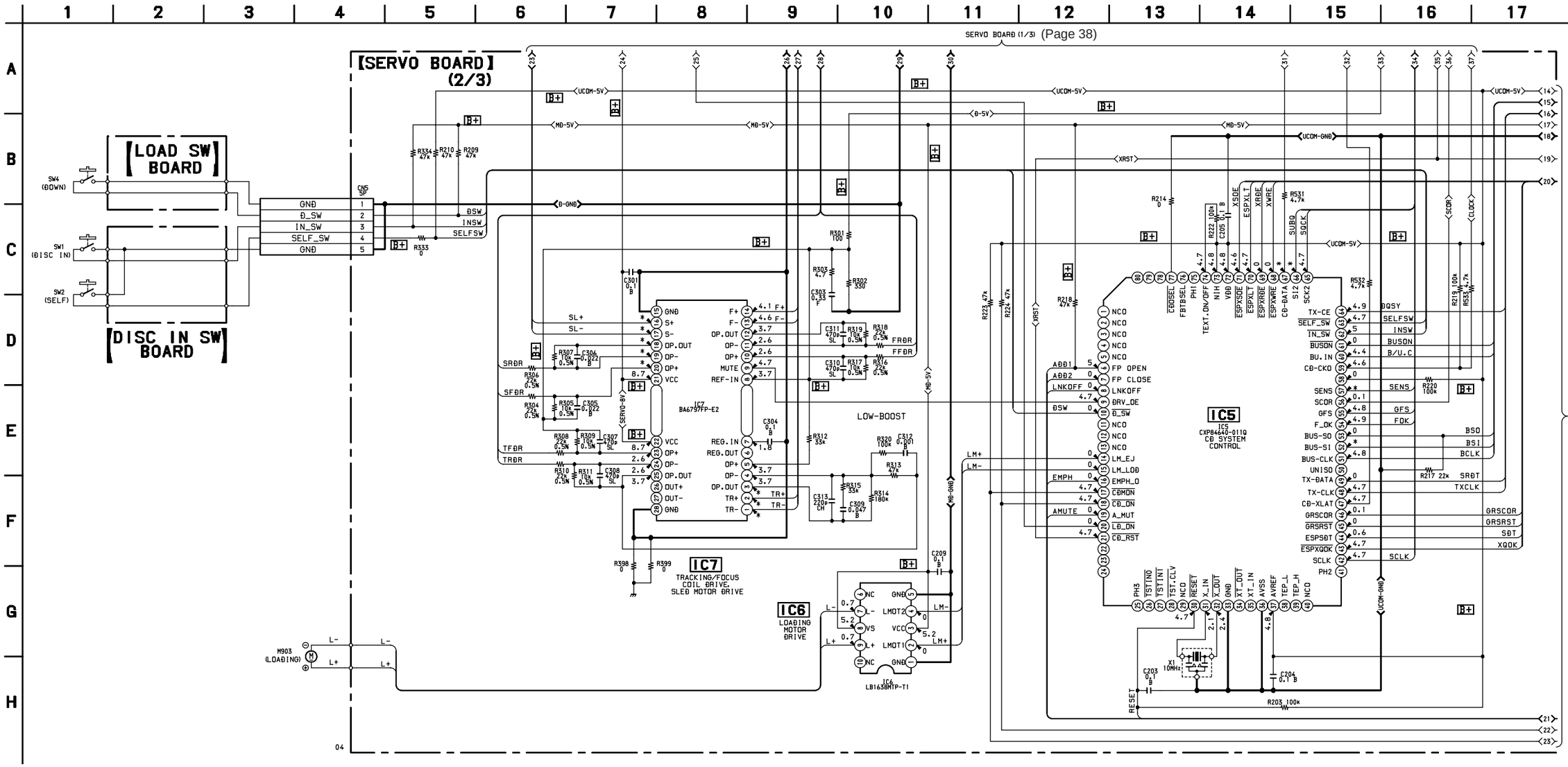
4-4. BLOCK DIAGRAM — DISPLAY SECTION —



3-8. SCHEMATIC DIAGRAM — CD MECHANISM SECTION (2/3) — • Refer to page 63 for IC Block Diagrams.



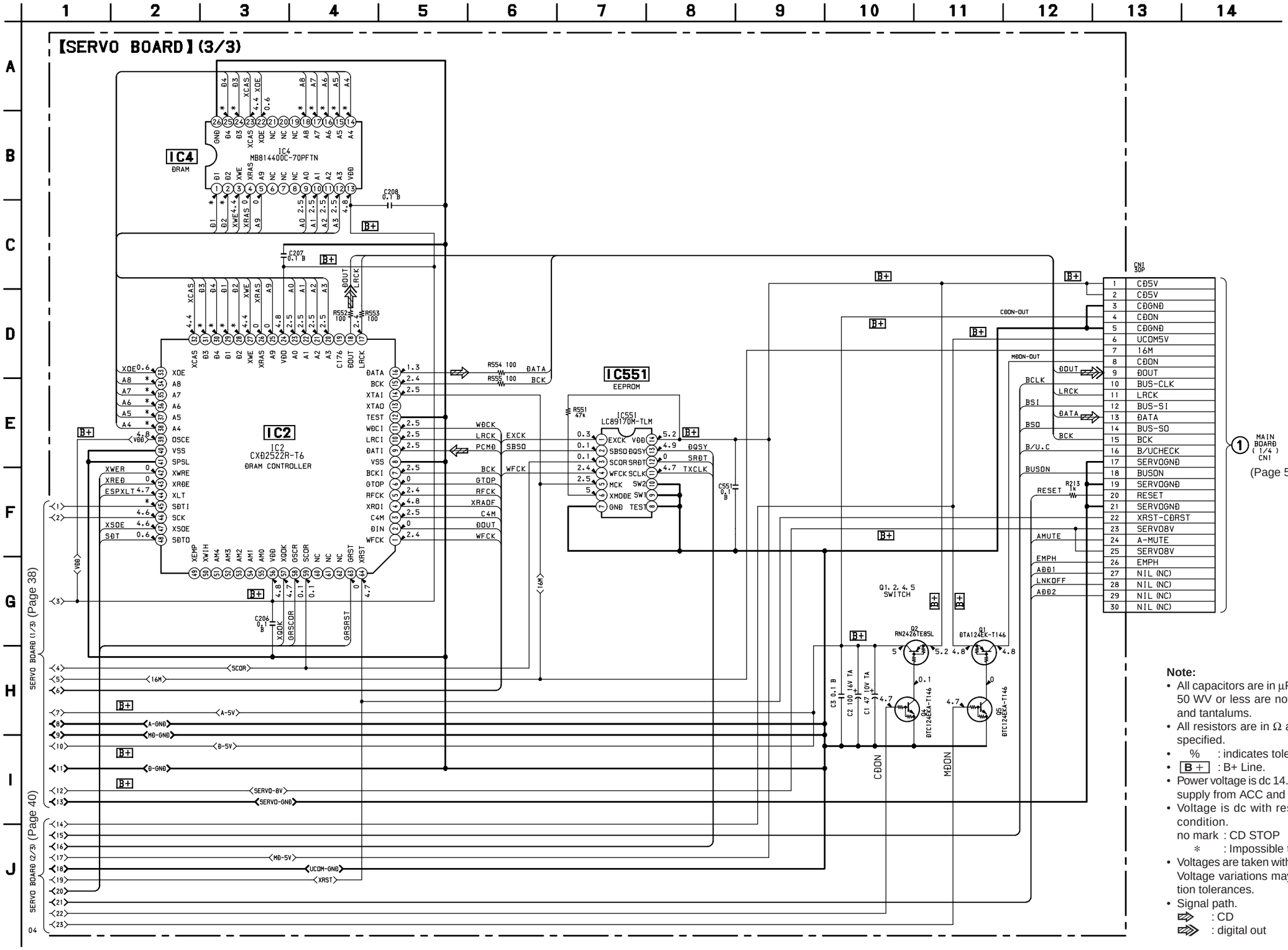
Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- B + : B+ Line.
- Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BATT cords.
- Voltage is dc with respect to ground under no-signal condition.
  no mark : CD PLAY
  ✻ : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.

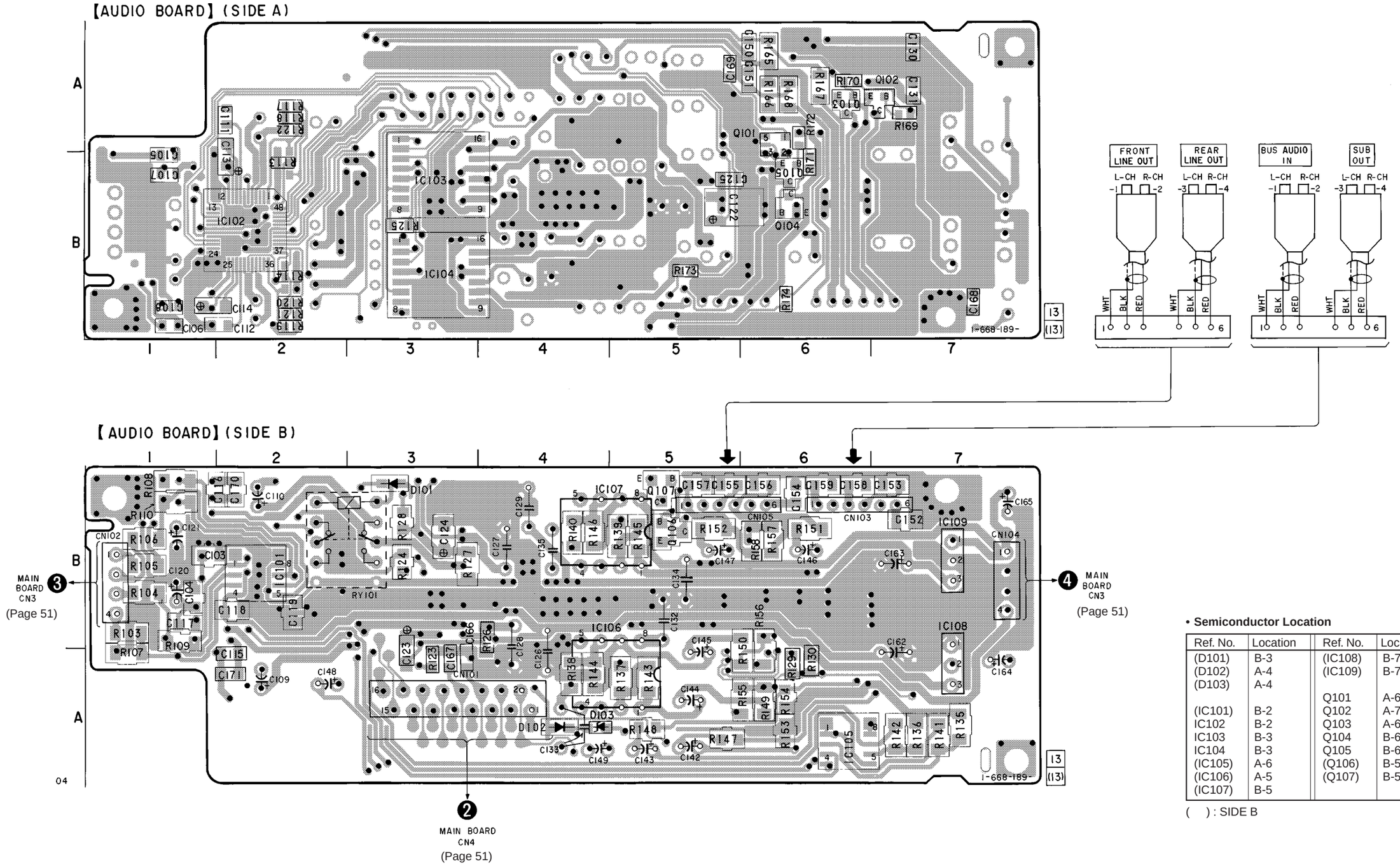
3-9. SCHEMATIC DIAGRAM — CD MECHANISM SECTION (3/3) — • Refer to page 63 for IC Block Diagrams.



Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- B+ : B+ Line.
- Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BATT cords.
- Voltage is dc with respect to ground under no-signal condition.
  no mark : CD STOP
  * : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  : CD
  : digital out

3-10. PRINTED WIRING BOARD — AUDIO SECTION —



• **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location
(D101)	B-3	(IC108)	B-7
(D102)	A-4	(IC109)	B-7
(D103)	A-4		
		Q101	A-6
(IC101)	B-2	Q102	A-7
IC102	B-2	Q103	A-6
IC103	B-3	Q104	B-6
IC104	B-3	Q105	B-6
(IC105)	A-6	(Q106)	B-5
(IC106)	A-5	(Q107)	B-5
(IC107)	B-5		

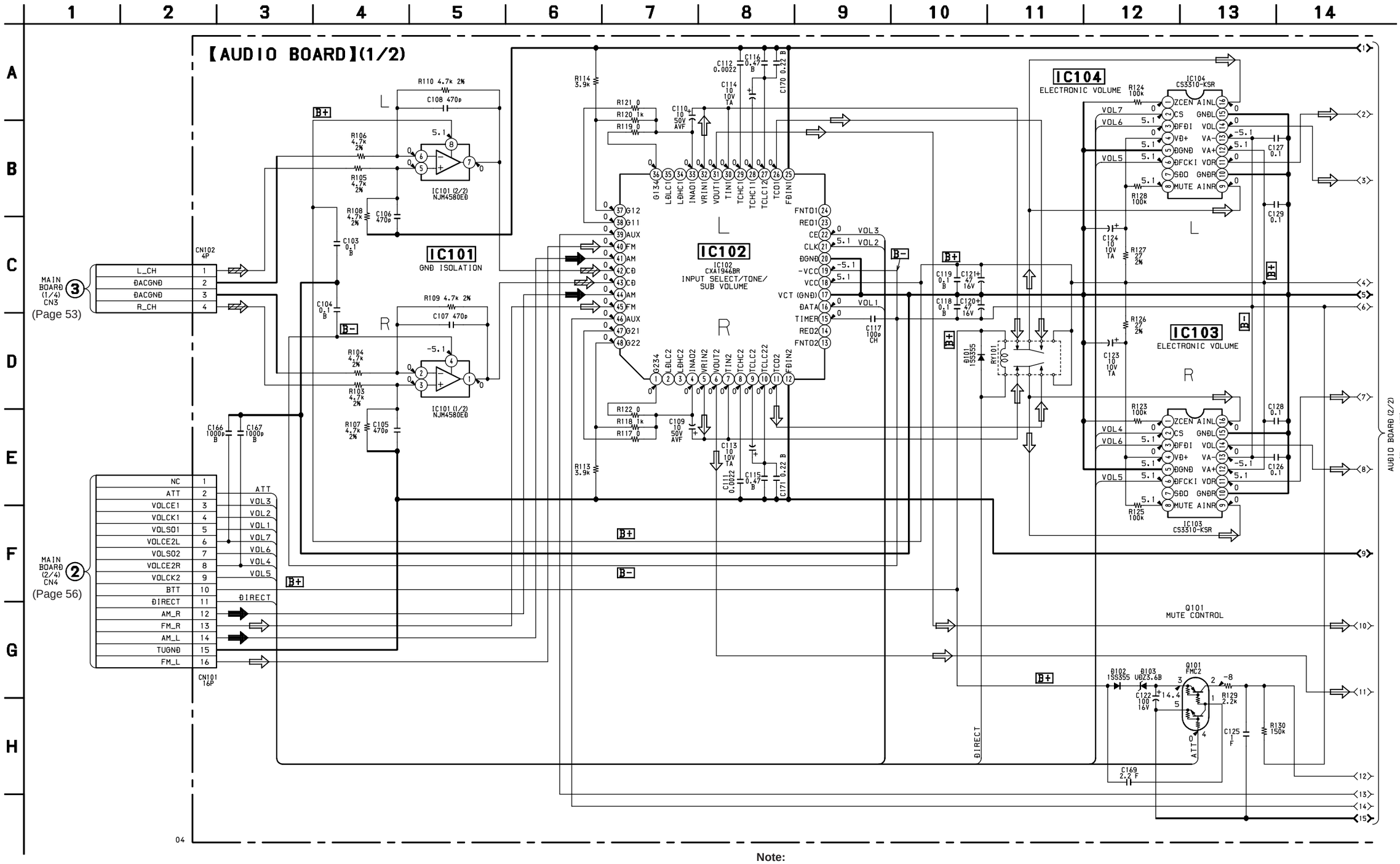
( ) : SIDE B

Note:

- ○——— : parts extracted from the component side.
- ● : Through hole.
- ▒▒▒ : Pattern from the side which enables seeing. (The other layer's patterns are not indicated.)

Caution:	
Pattern face side: (Side B)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A)	Parts on the parts face side seen from the parts face are indicated.

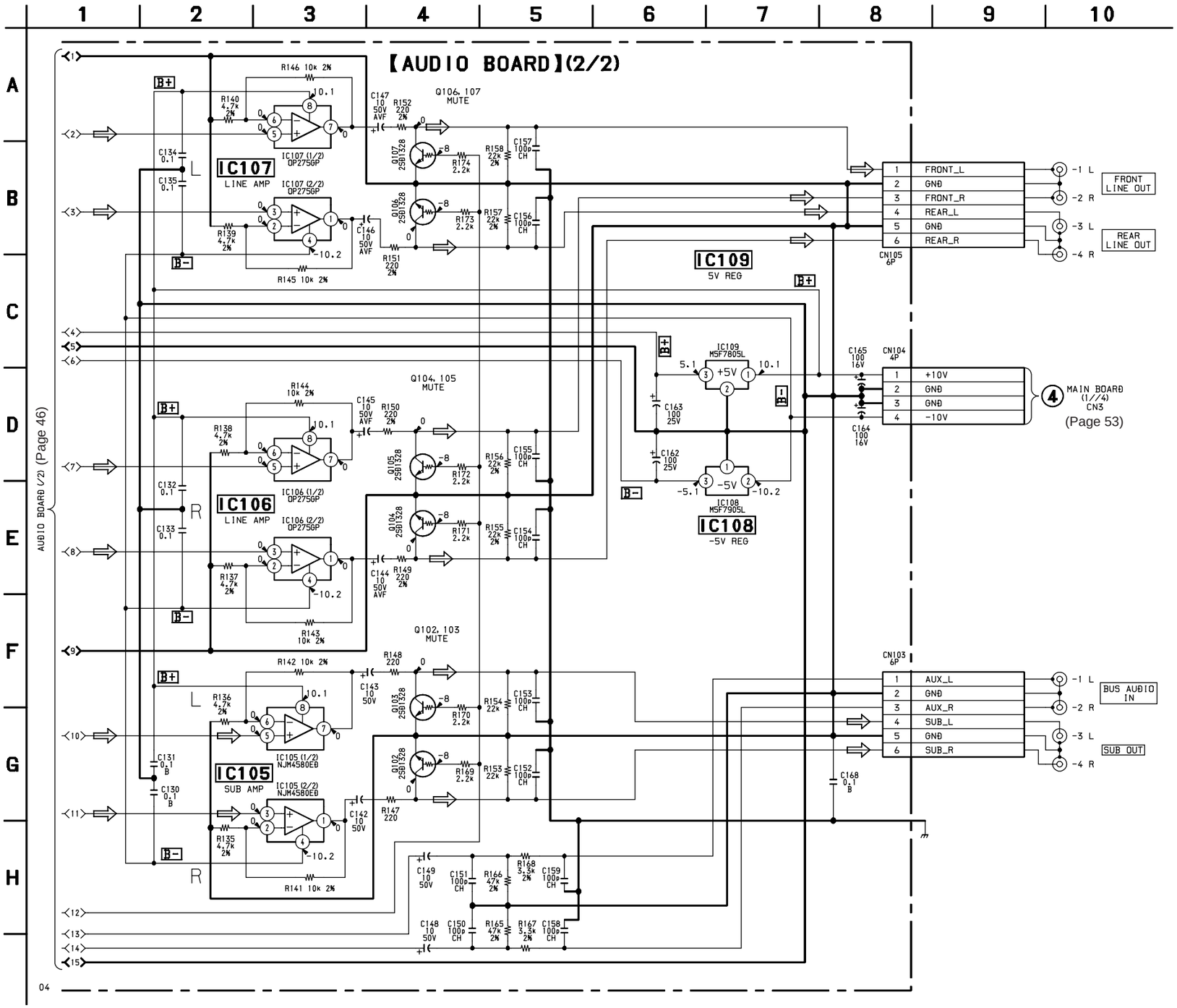
3-11. SCHEMATIC DIAGRAM — AUDIO SECTION (1/2) — • Refer to page 65 for IC Block Diagrams.



Note:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- B+ : B+ Line.
- B– : B– Line.
- Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BATT cords.
- Voltage is dc with respect to ground under no-signal (detuned) condition.
  no mark : FM
  * : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  : FM
  : MW
  : CD

3-12. SCHEMATIC DIAGRAM — AUDIO SECTION (2/2) —



Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- ▭ : panel designation.
- B+ : B+ Line.
- ▬ : adjustment for repair.
- Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BATT cords.
- Voltage is dc with respect to ground under no-signal (detuned) condition.
  no mark : FM
  ( ) : MW
  < > : CD PLAY
  [ ] : PANEL MOTOR operation
  * : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM
  ➡ : MW
  ⇨ : CD
  ⇨ : digital out
- Abbreviation
  G : German model.

• **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location
D300	H-5	(IC504)	H-7
D301	G-5	(IC505)	H-6
D302	A-7	(IC600)	G-1
(D303)	B-7	IC601	H-1
(D304)	B-8	IC602	H-2
(D305)	B-8	IC721	D-2
(D306)	B-7	IC722	C-2
(D309)	I-4	(IC761)	E-2
(D310)	I-4	(IC771)	E-4
(D311)	I-5	IC801	C-4
(D312)	F-7	IC802	B-3
D313	D-7	IC851	D-5
(D314)	E-8	(IC901)	F-4
(D370)	B-8	IC921	G-4
(D371)	B-8	IC941	F-4
(D372)	B-9	IC951	F-2
(D373)	B-9		
(D374)	H-4	LED300	I-7
D400	B-6	LED301	I-8
D401	B-6	LED302	I-6
D402	D-6		
(D403)	C-7	(Q300)	G-2
D404	C-6	Q301	I-7
D405	A-6	Q302	I-7
D406	G-7	Q303	B-5
(D409)	E-8	Q304	I-5
D410	A-5	Q305	I-5
D412	A-6	Q308	A-7
D414	A-5	(Q309)	B-7
D415	A-6	Q310	A-7
(D416)	A-4	Q311	A-7
(D417)	A-4	Q400	C-6
(D418)	A-4	(Q401)	B-6
(D419)	B-10	Q402	D-6
(D422)	B-4	Q403	C-6
D423	C-6	Q404	D-6
D424	E-8	(Q405)	C-7
D600	G-1	Q406	D-6
(D604)	G-2	Q407	A-6
(D605)	G-2	Q408	I-9
(D791)	E-5	Q411	I-9
D792	E-5	Q415	A-6
(D801)	C-5	Q416	A-6
D804	B-3	Q417	A-6
D900	B-5	Q601	H-3
		Q603	H-2
IC1	I-9	Q605	G-1
(IC2)	E-10	(Q702)	F-2
(IC3)	D-7	Q703	D-1
(IC4)	B-7	(Q704)	F-2
IC5	C-8	(Q721)	F-2
IC6	C-9	(Q722)	D-2
(IC7)	E-8	Q724	C-2
(IC8)	E-10	Q771	E-5
(IC9)	E-10	Q781	D-5
(IC10)	F-10	(Q791)	E-5
(IC11)	H-10	(Q792)	E-4
IC300	E-6	(Q801)	C-4
(IC301)	G-7	(Q802)	C-5
IC302	A-7	(Q803)	C-4
IC303	F-7	Q804	B-3
(IC304)	H-4	Q805	C-3
IC400	C-6	(Q851)	D-5
IC500	H-6	Q900	B-5
IC501	I-6	Q941	F-4
(IC502)	H-6	(Q991)	E-2
IC503	H-7		

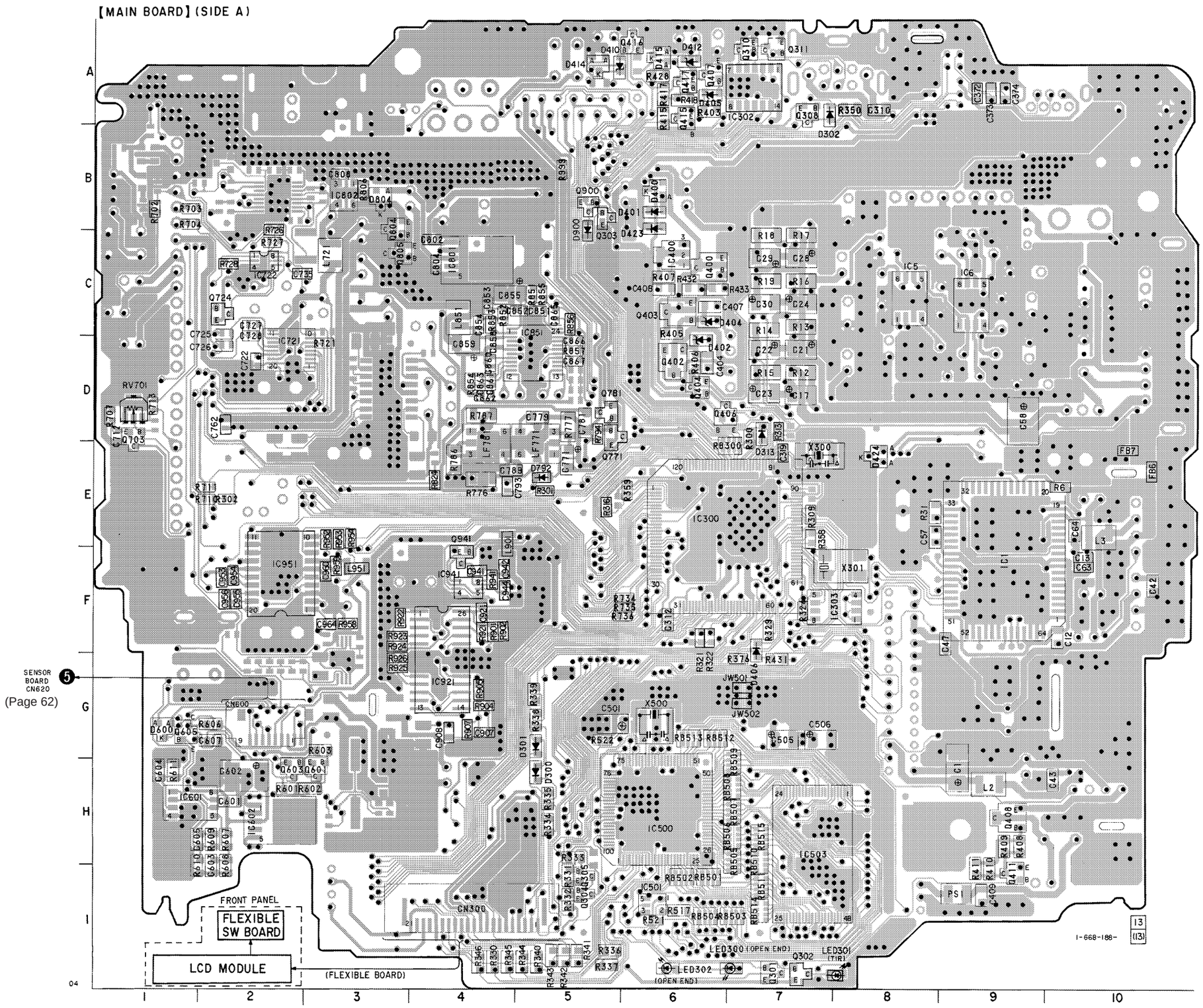
( ) : SIDE B

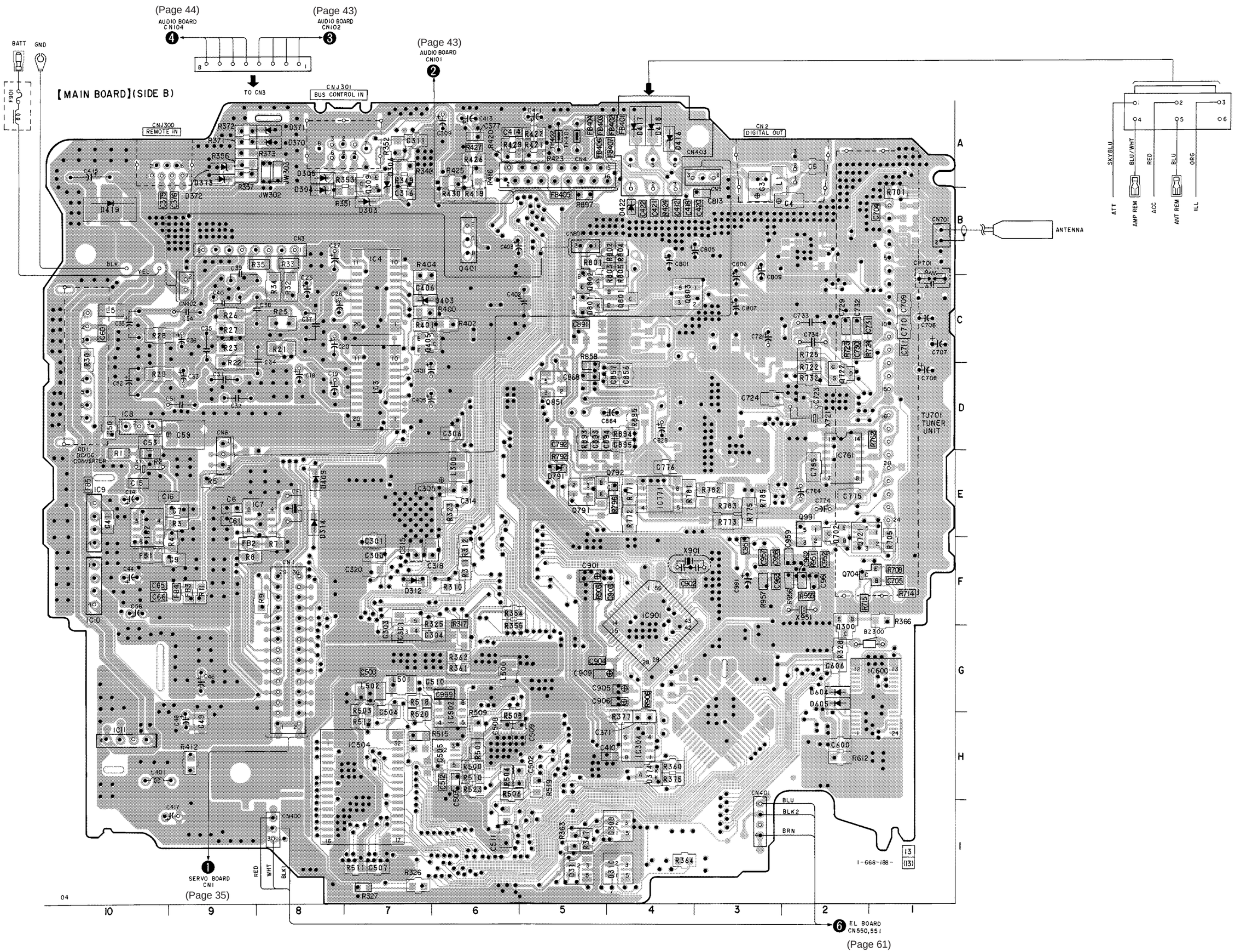
Note:

- ○——— : parts extracted from the component side.
- ● : Through hole.
- △ : internal component.
- ▒▒ : Pattern from the side which enables seeing. (The other layer's patterns are not indicated.)

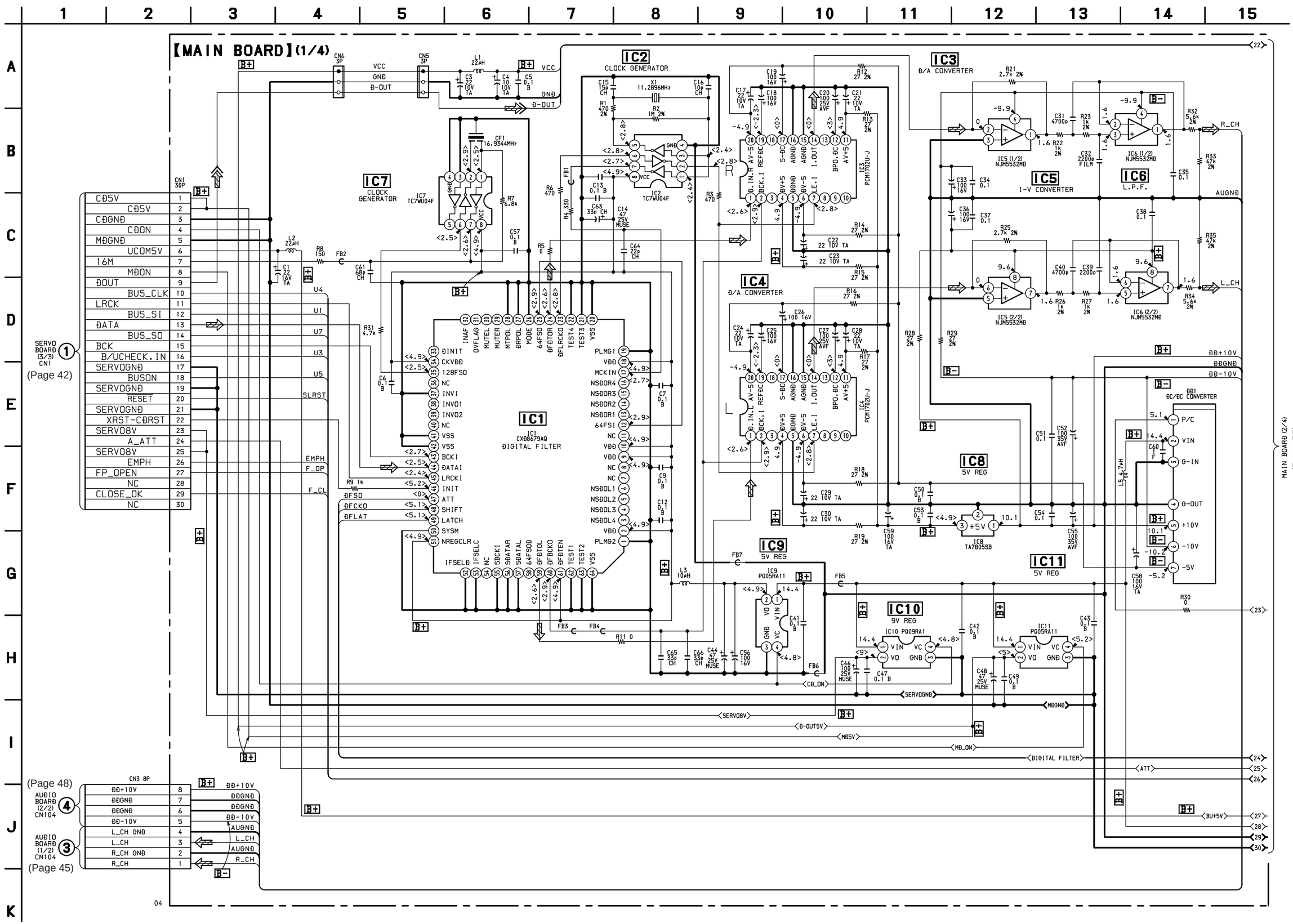
Caution:
Pattern face side: Parts on the pattern face side seen from the (Side B) pattern face are indicated.
Parts face side: Parts on the parts face side seen from the (Side A) parts face are indicated.

3-13. PRINTED WIRING BOARDS — MAIN SECTION —

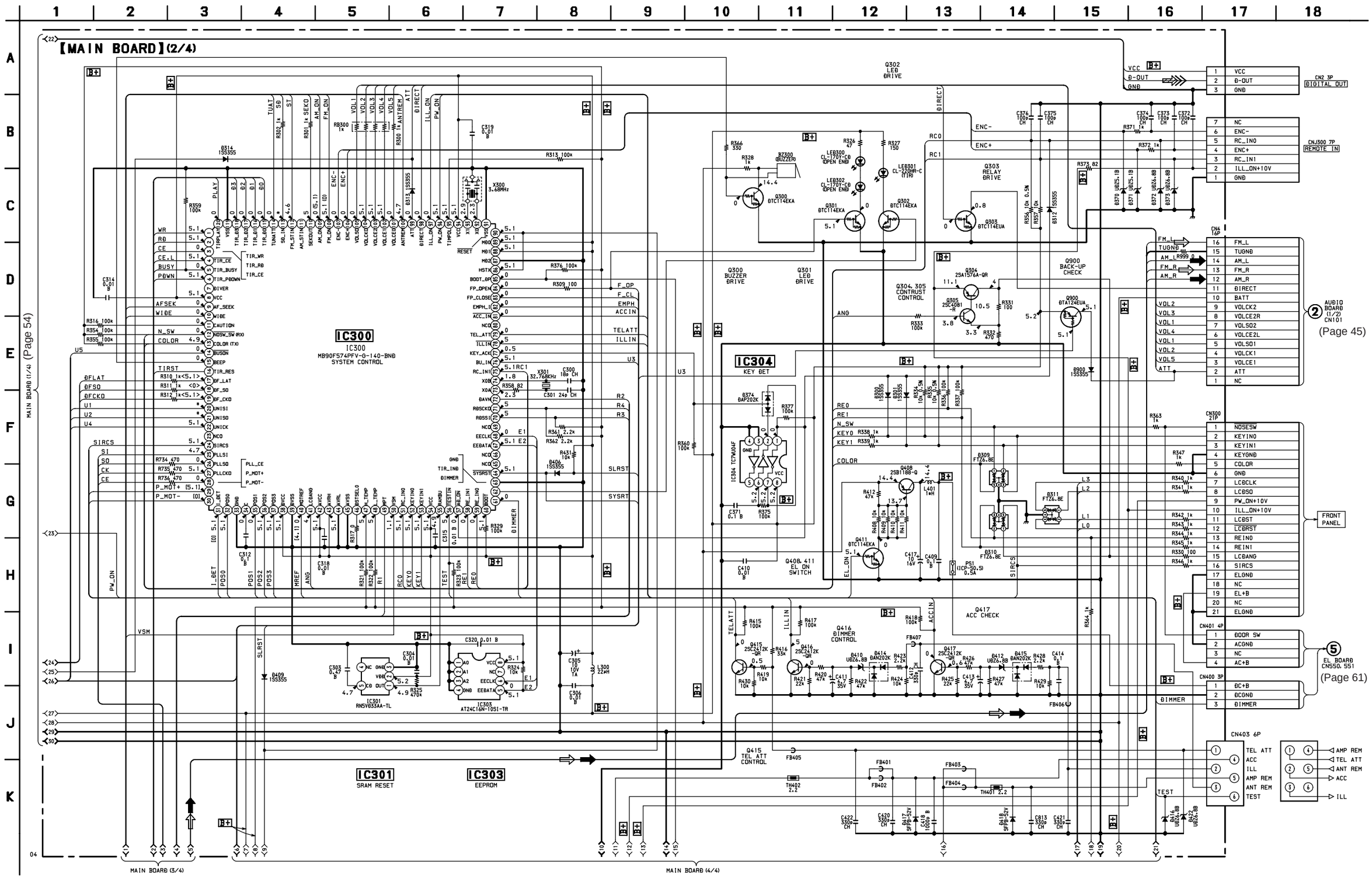



(Page 44)
AUDIO BOARD CN104
(Page 43)
AUDIO BOARD CN102
(Page 43)
AUDIO BOARD CN101
BATT
GND
F901
【MAIN BOARD】(SIDE B)
TO CN3
CNJ301 BUS CONTROL IN
CNJ300 REMOTE IN
CN2 DIGITAL OUT
CN403
CN701
ANTENNA
SKY BLU
BLU/WHT
RED
BLU
ORG
ATT
AMP REM
ACC
ANT REM
ILL
TU701 TUNER UNIT
DC/DC CONVERTER
SERVO BOARD CN1
(Page 35)
CN400
RED
WHT
BLK
CN401
BLU
BLK2
BRN
EL BOARD CN550,551
(Page 61)
1-668-188-
04

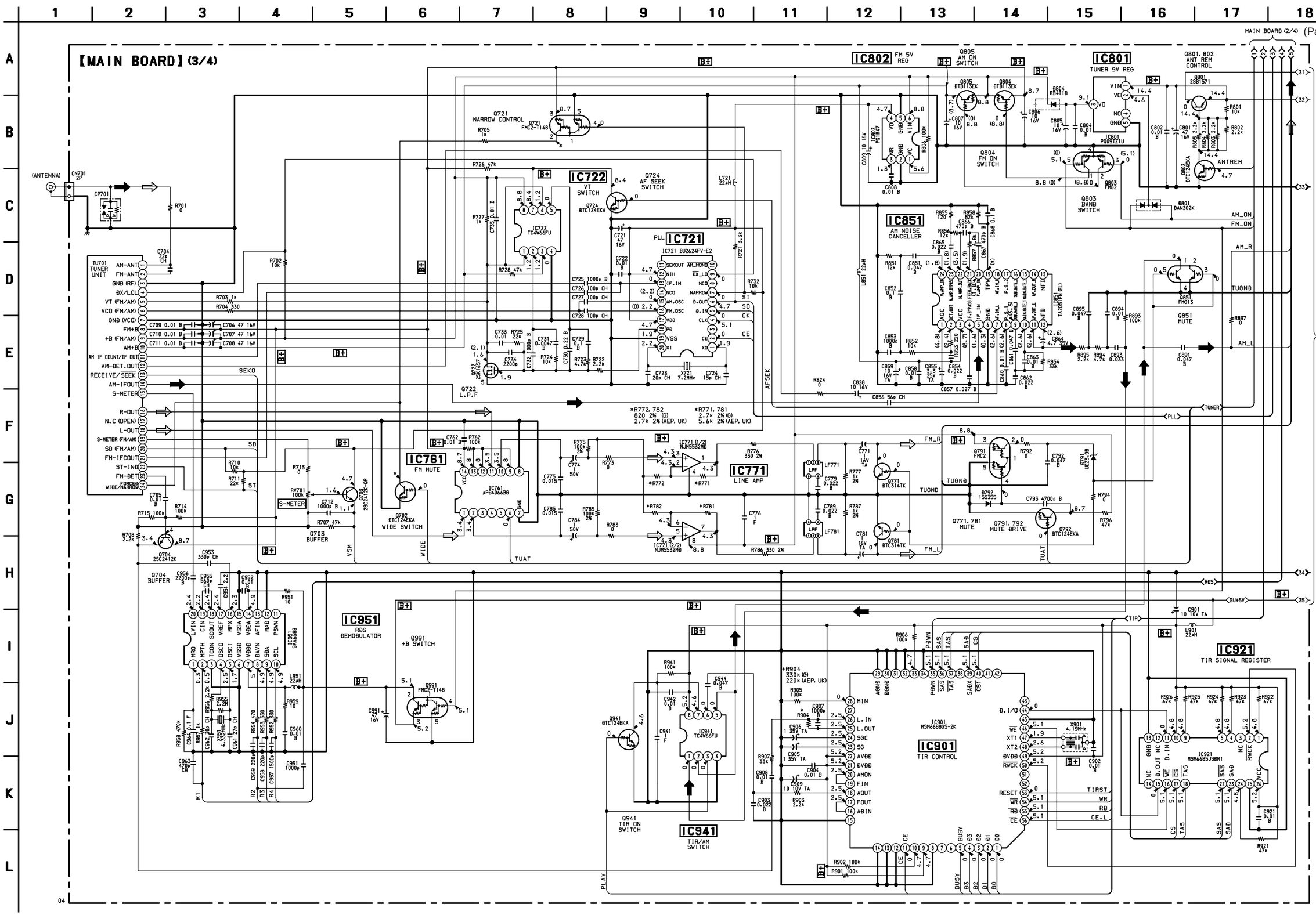
3-14. SCHEMATIC DIAGRAM — MAIN SECTION (1/4) — • Refer to page 48 for Note and Refer to page 63 for IC Block Diagrams.



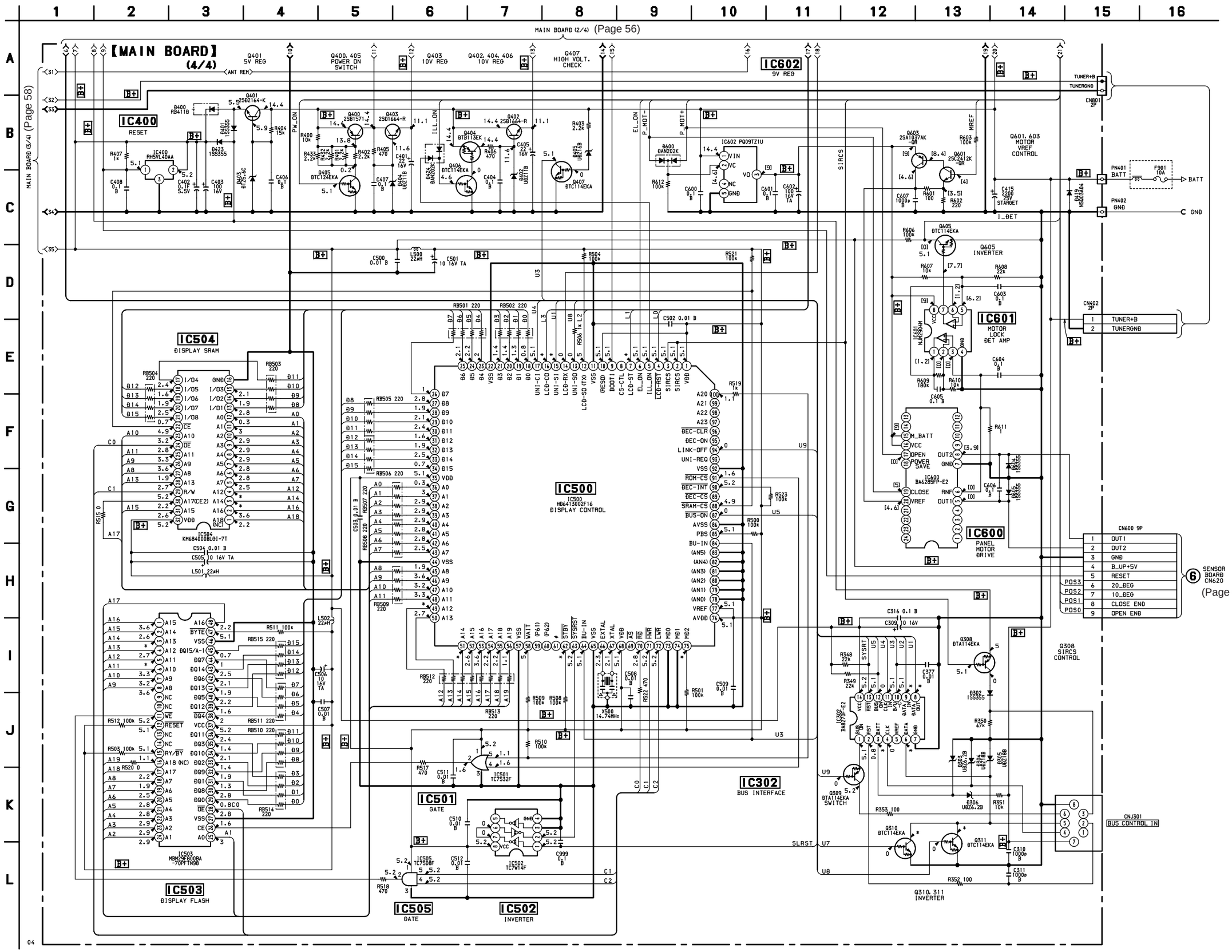
3-15. SCHEMATIC DIAGRAM — MAIN SECTION (2/4) — • Refer to page 48 for Note and Refer to page 66 for IC Block Diagrams.



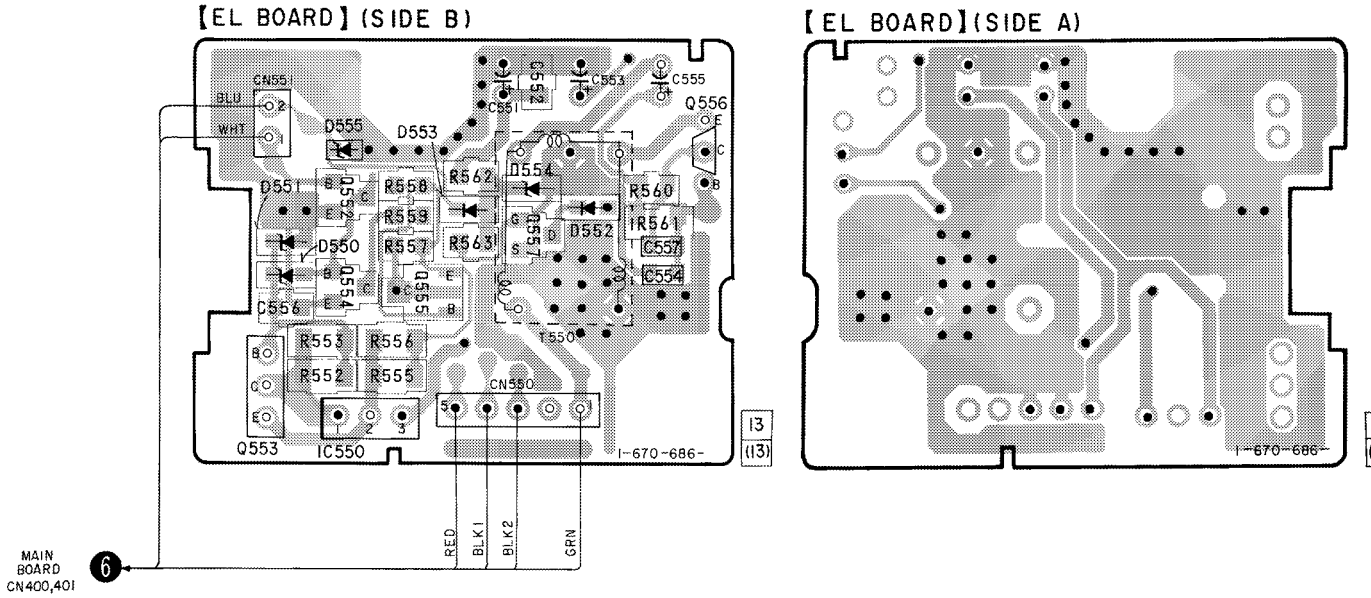
HEMA TIC DIA GRAM — MAIN SECTION (3/4) — • Refer to page 48 for Note and Refer to page 67 for IC Block Diagrams.



3-17. SCHEMATIC DIAGRAM — MAIN SECTION (4/4) — • Refer to page 48 for Note and Refer to page 66 for IC Block Diagrams.



3-18. PRINTED WIRING BOARD — EL SECTION —



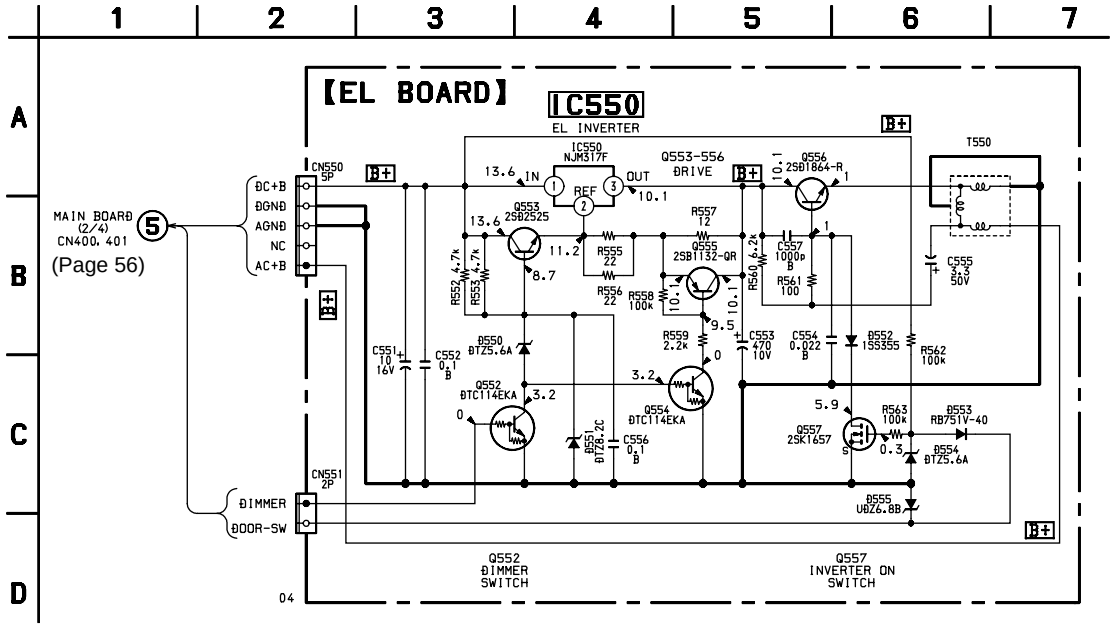
(Page 52)

Note:

- ○——— : parts extracted from the component side.
- ● : Through hole.
- ▒▒▒ : Pattern from the side which enables seeing. (The other layer's patterns are not indicated.)

Caution:	
Pattern face side: (Side B)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A)	Parts on the parts face side seen from the parts face are indicated.

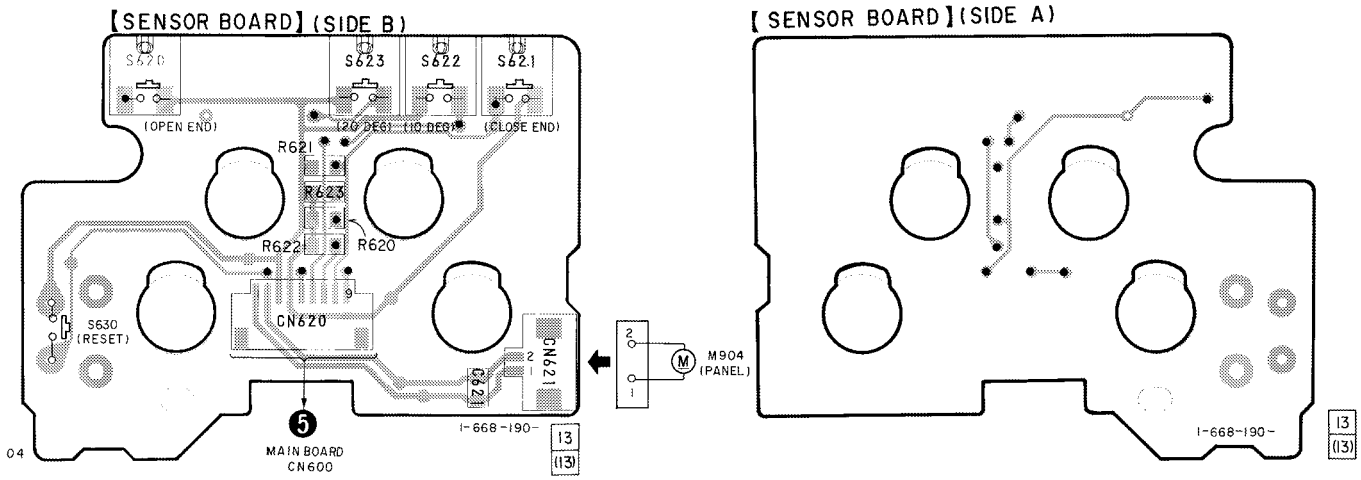
3-19. SCHEMATIC DIAGRAM — EL SECTION —



Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- B+ : B+ Line.
- Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BATT cords.
- Voltage is dc with respect to ground under no-signal (detuned) condition.
  no mark : FM

3-20. PRINTED WIRING BOARD — SENSOR SECTION —



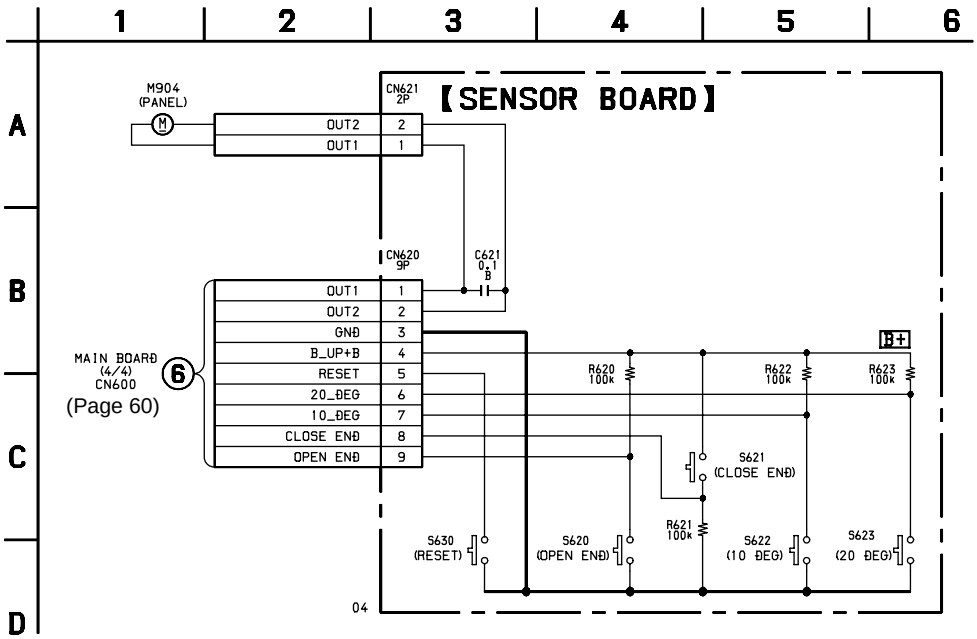
(Page 49)

Note:

- ○——— : parts extracted from the component side.
- ● : Through hole.
- ▒▒▒ : Pattern from the side which enables seeing. (The other layer's patterns are not indicated.)

Caution:	
Pattern face side: (Side B)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A)	Parts on the parts face side seen from the parts face are indicated.

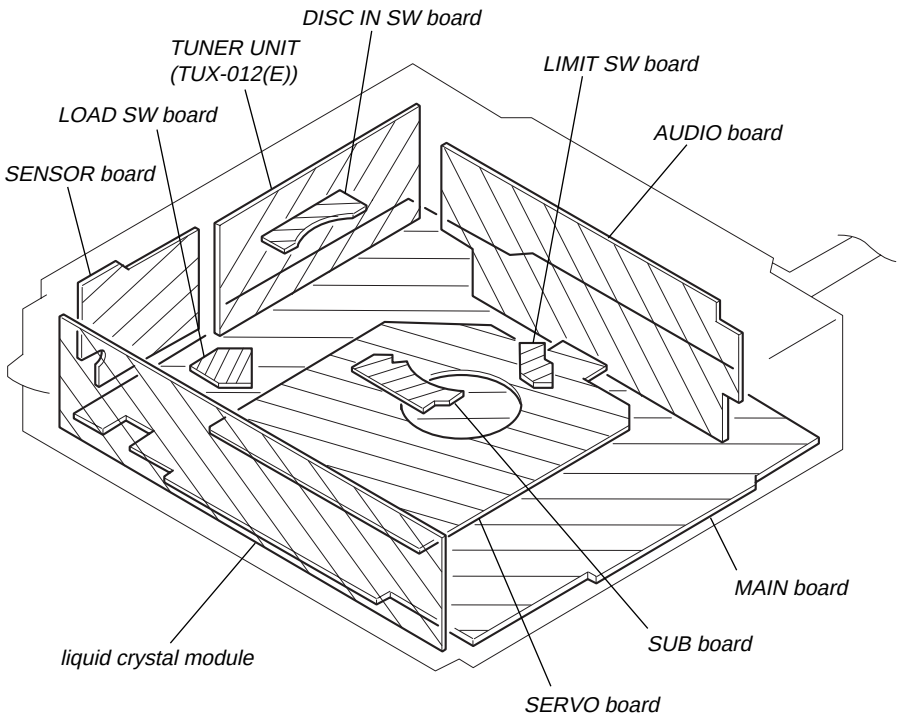
3-21. SCHEMATIC DIAGRAM — SENSOR SECTION —



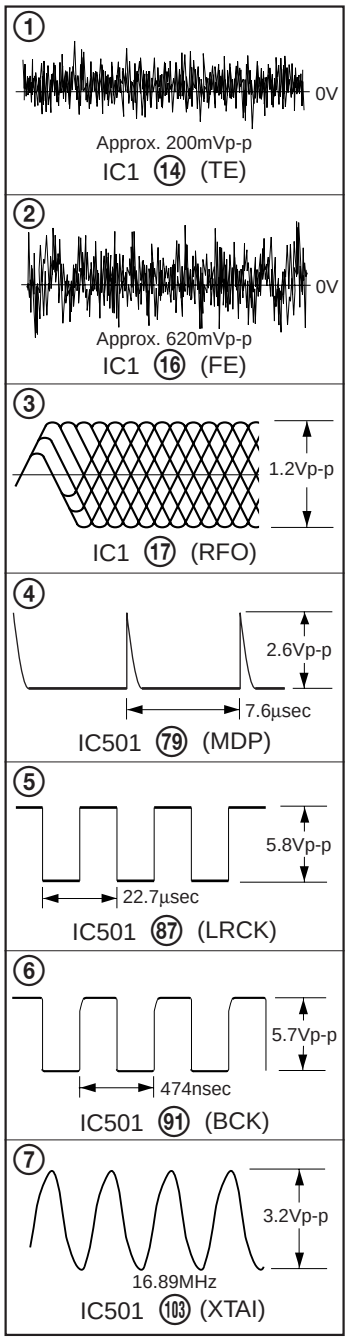
Note:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- B + : B+ Line.

4-5. CIRCUIT BOARDS LOCATION



• **Waveforms** (MODE:PLAY)



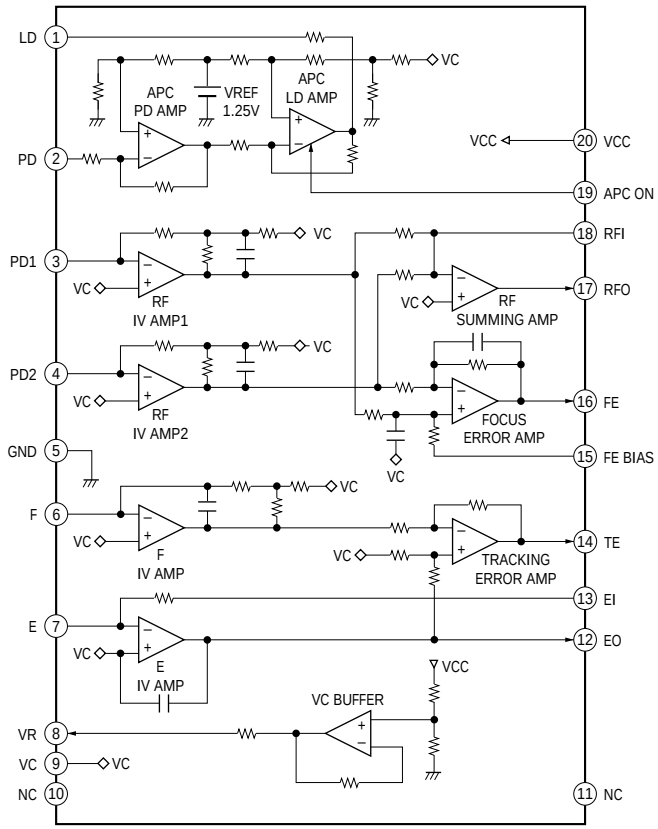
Note:
- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

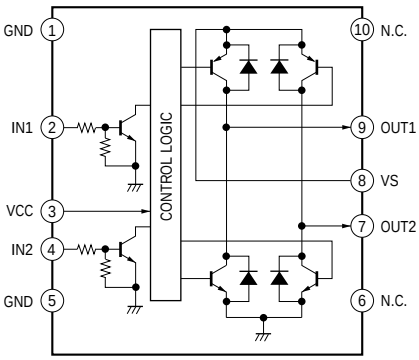
- B+ : B+ Line.
- Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BATT cords.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : CD PLAY
  ∗ : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD
  ⇛ : digital out

• **IC Block Diagrams**

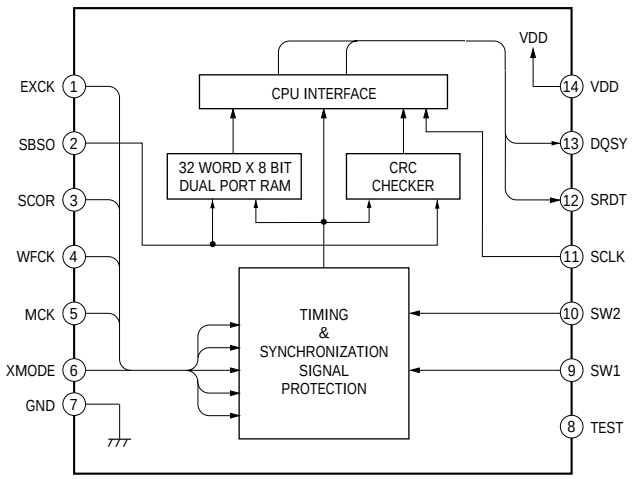
IC1 CXA1791N-T4 (SERVO BOARD)



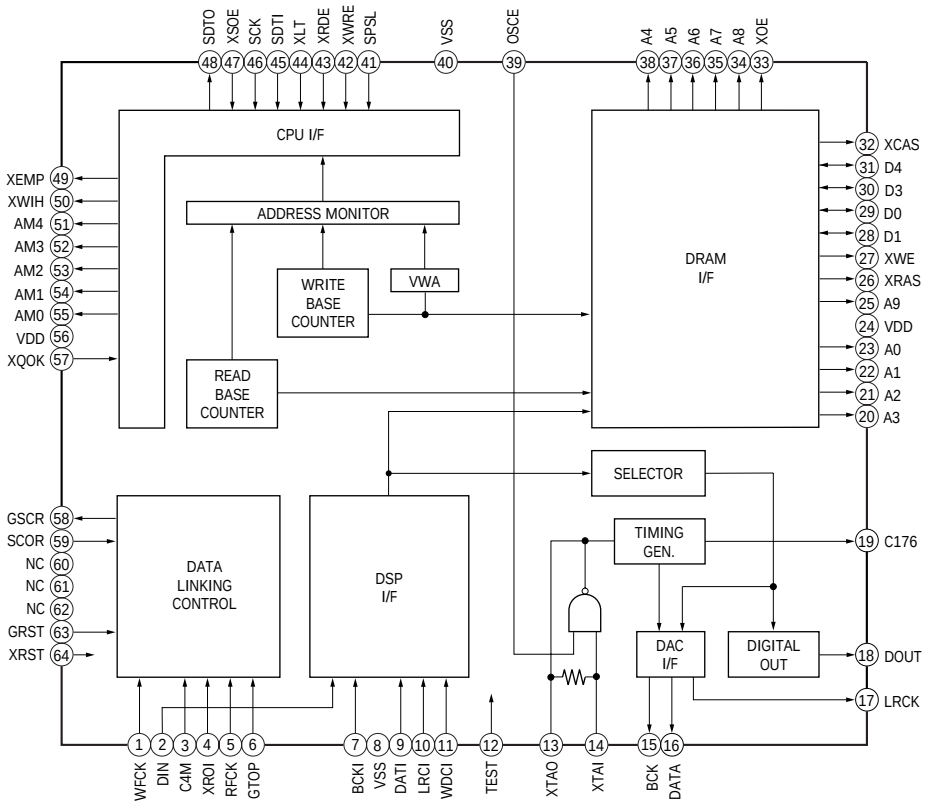
IC6 LB1638MTP-T1



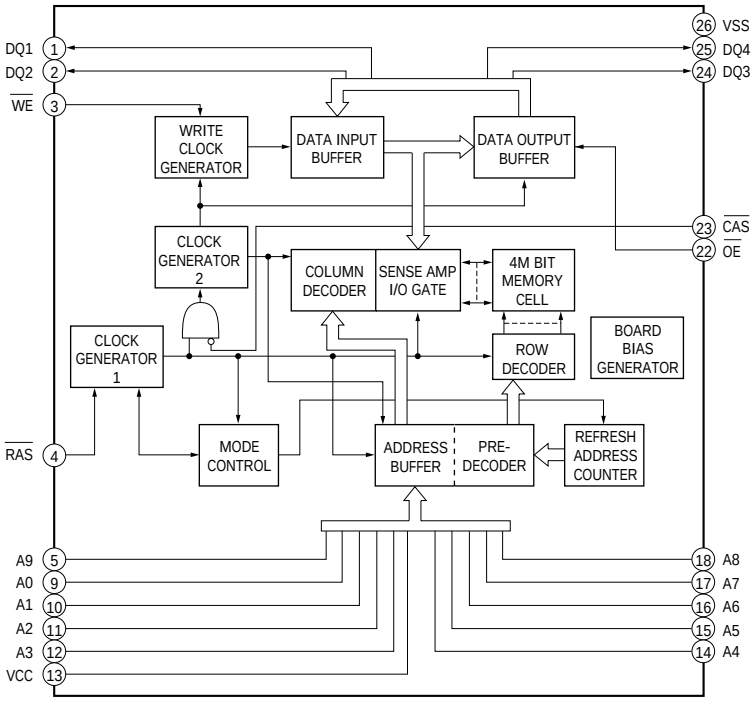
IC551 LC89170M-TLM



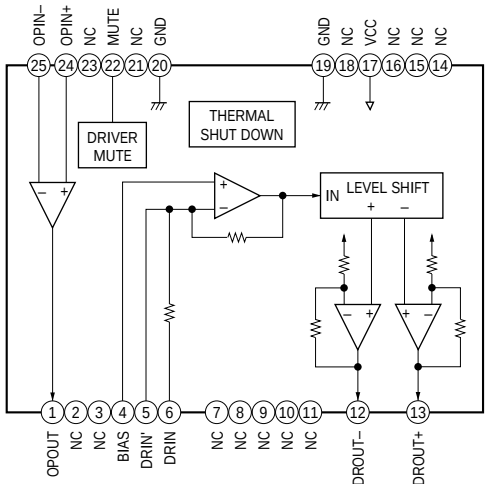
IC2 CXD2522R-T6



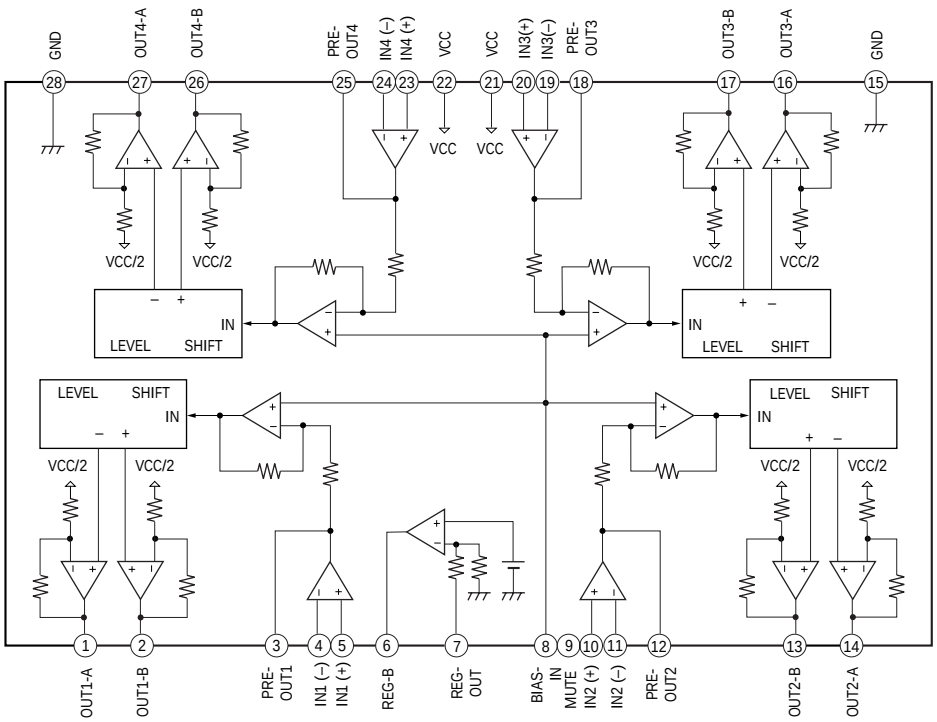
IC4 MB814400C-70PFTN (SERVO BOARD)



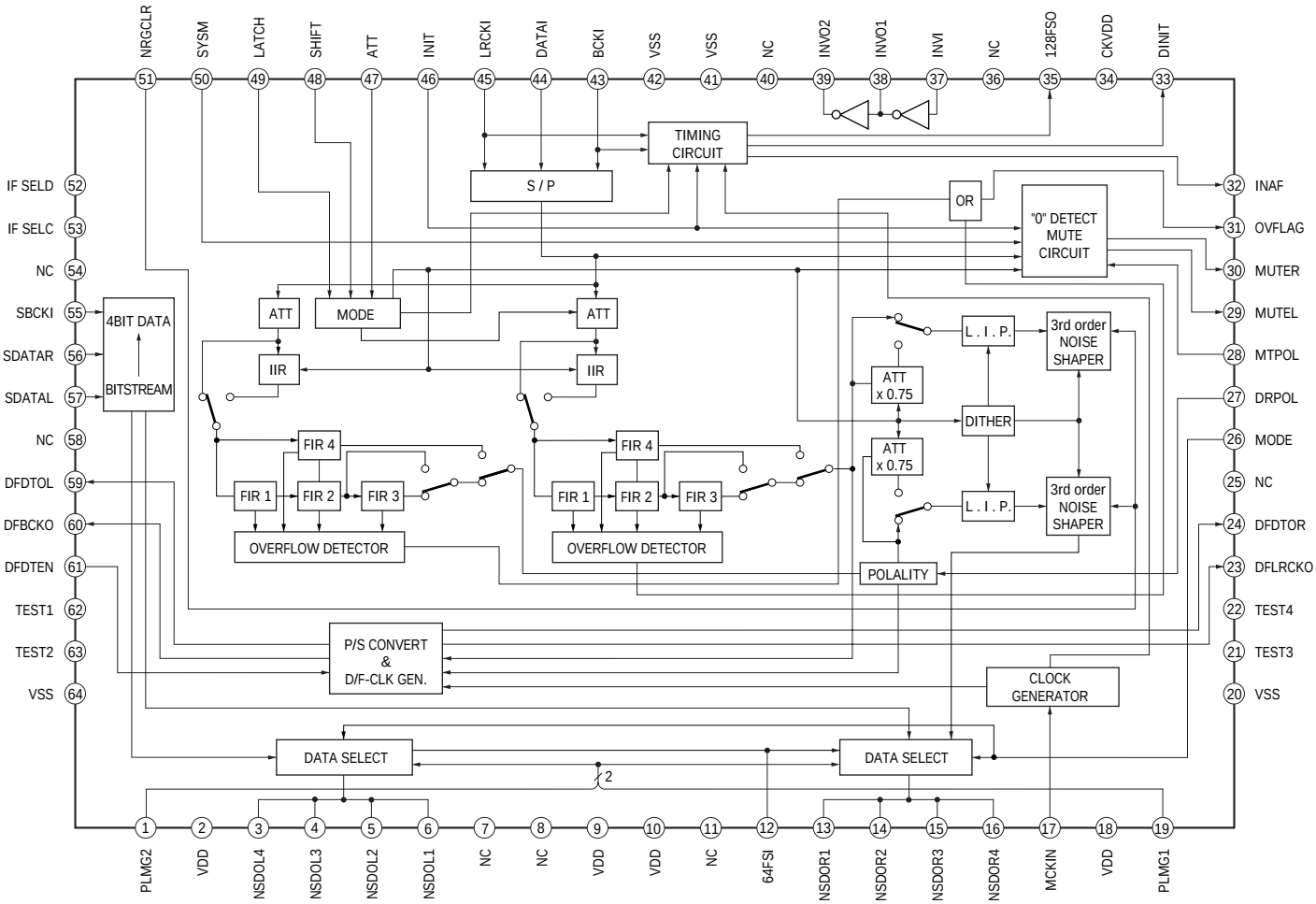
IC601 BA6195FP-YT2



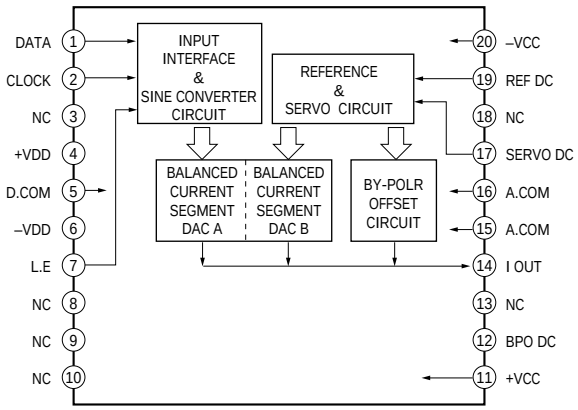
IC7 BA6797FP-E2



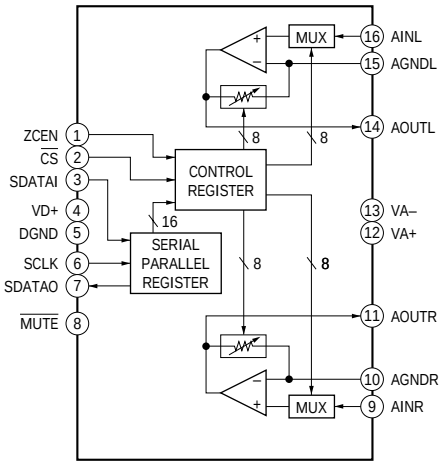
IC1 CXD8679Q (MAIN BOARD)



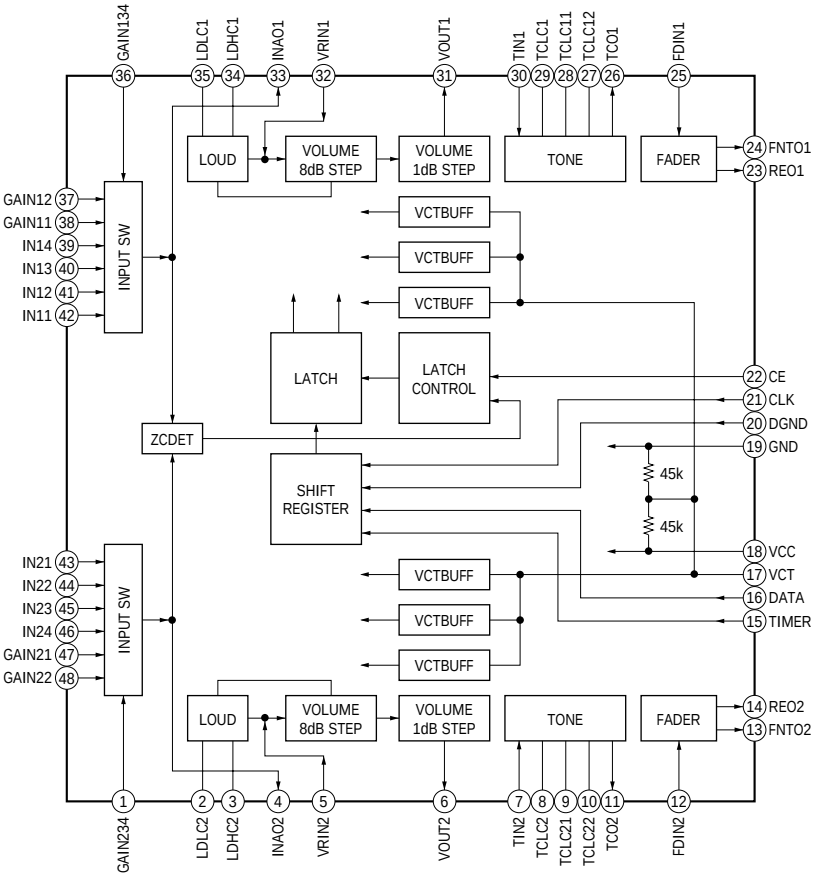
IC3, 4 PCM1702U-J (MAIN BOARD)



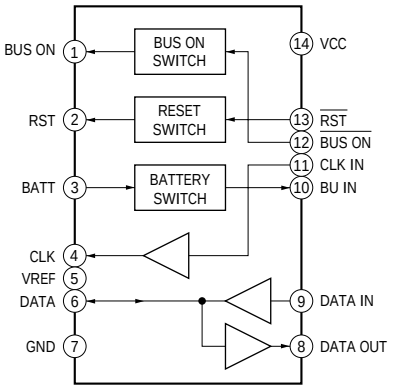
IC103, 104 CS3310-KSR



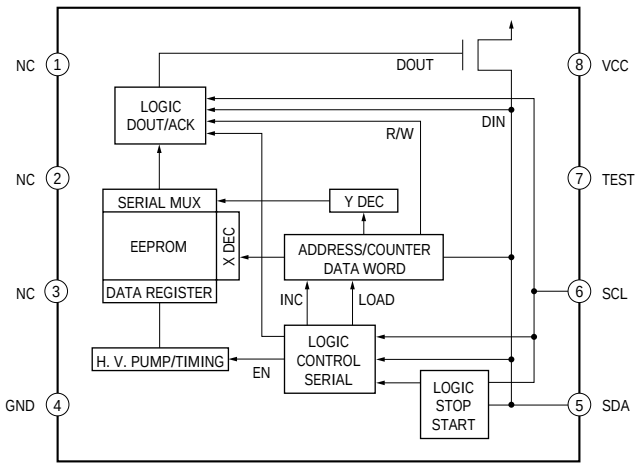
IC102 CXA1946BR



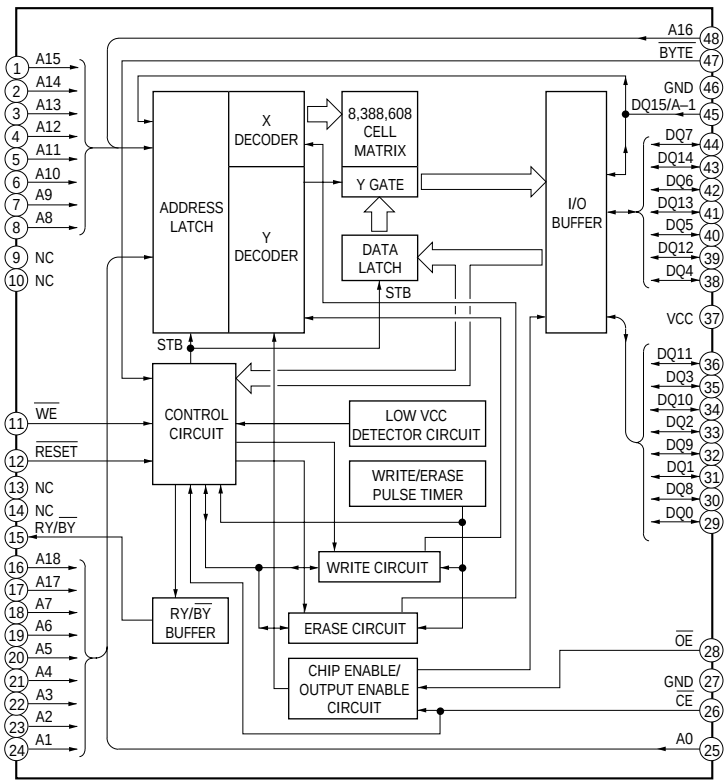
IC302 BA8270F-E2



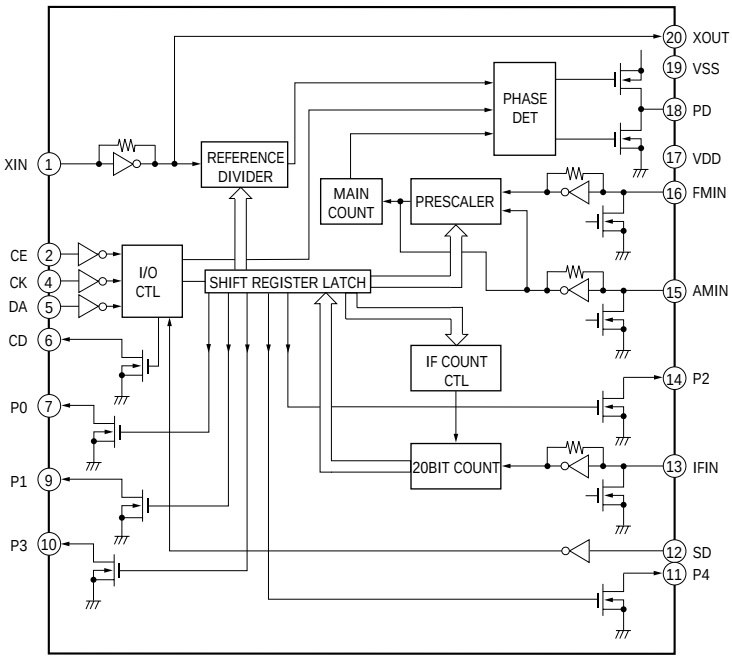
IC303 AT24C16N-10SI-TR



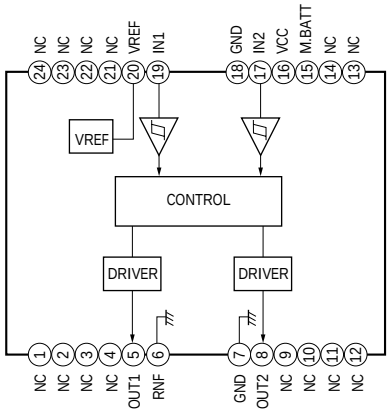
IC503 MBM29F800BA-70PFTN97



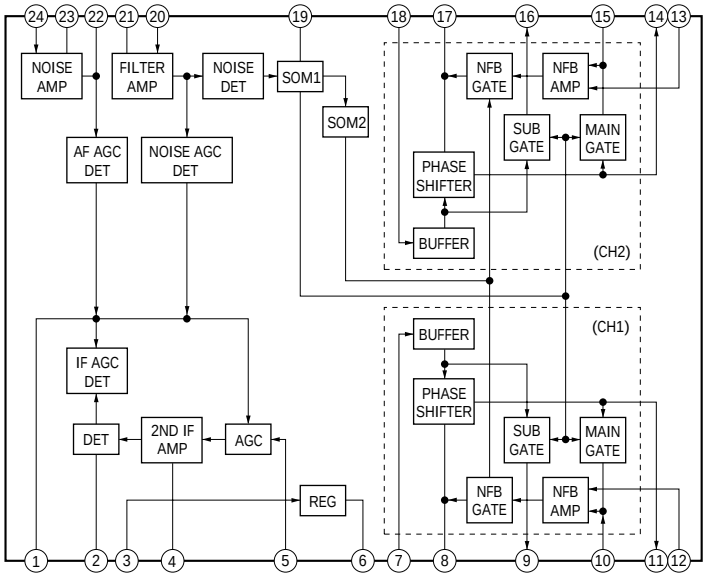
IC721 BU2624FV-E2



IC600 BA6285FP-E2



IC851 TA2051FN(EL)



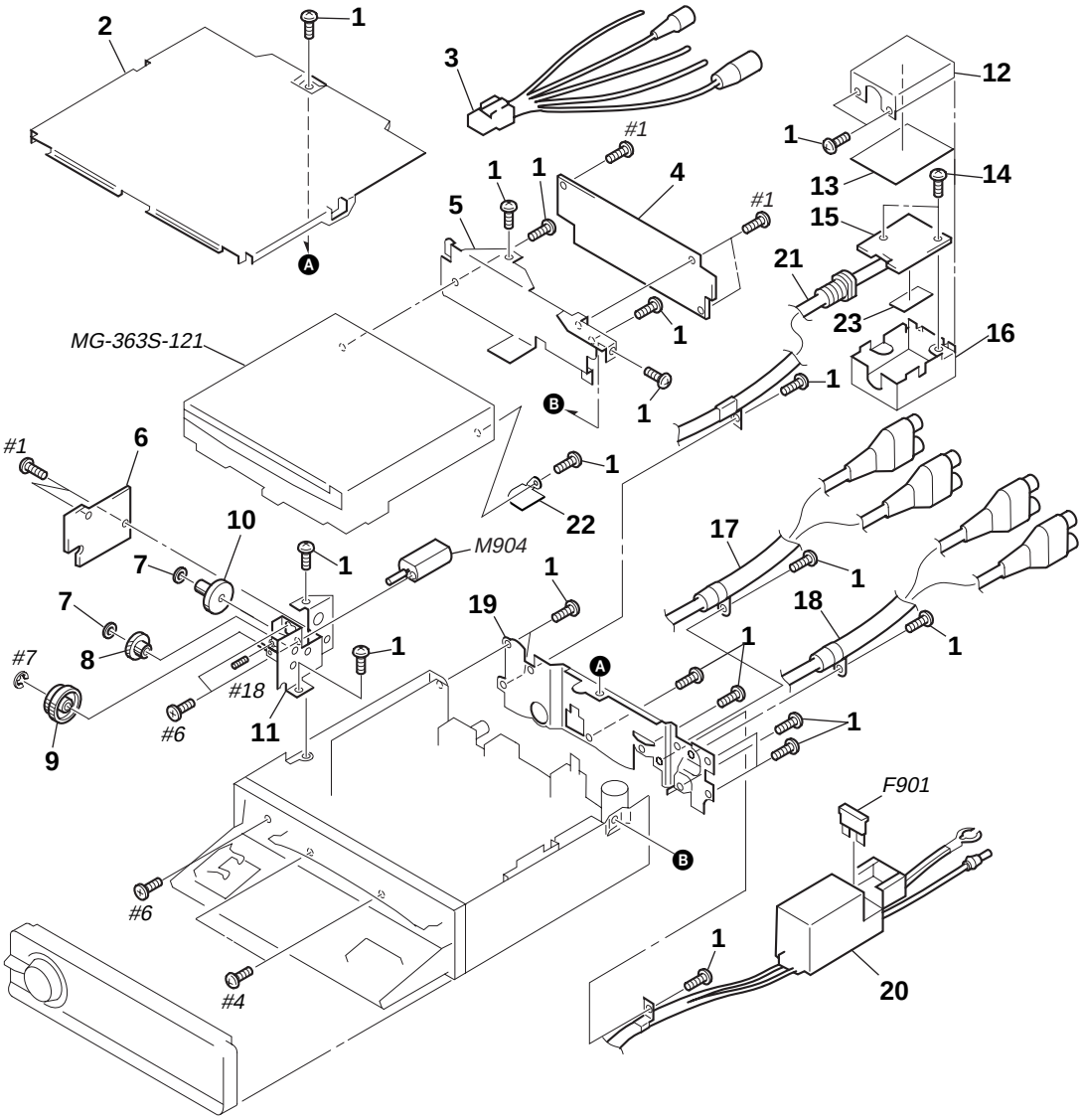
SECTION 5
EXPLODED VIEWS

NOTE:
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.

- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE) ... (RED)
  ↑ Parts Color ↑ Cabinet's Color
- Accessories and packing materials and hardware (# mark) list are given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

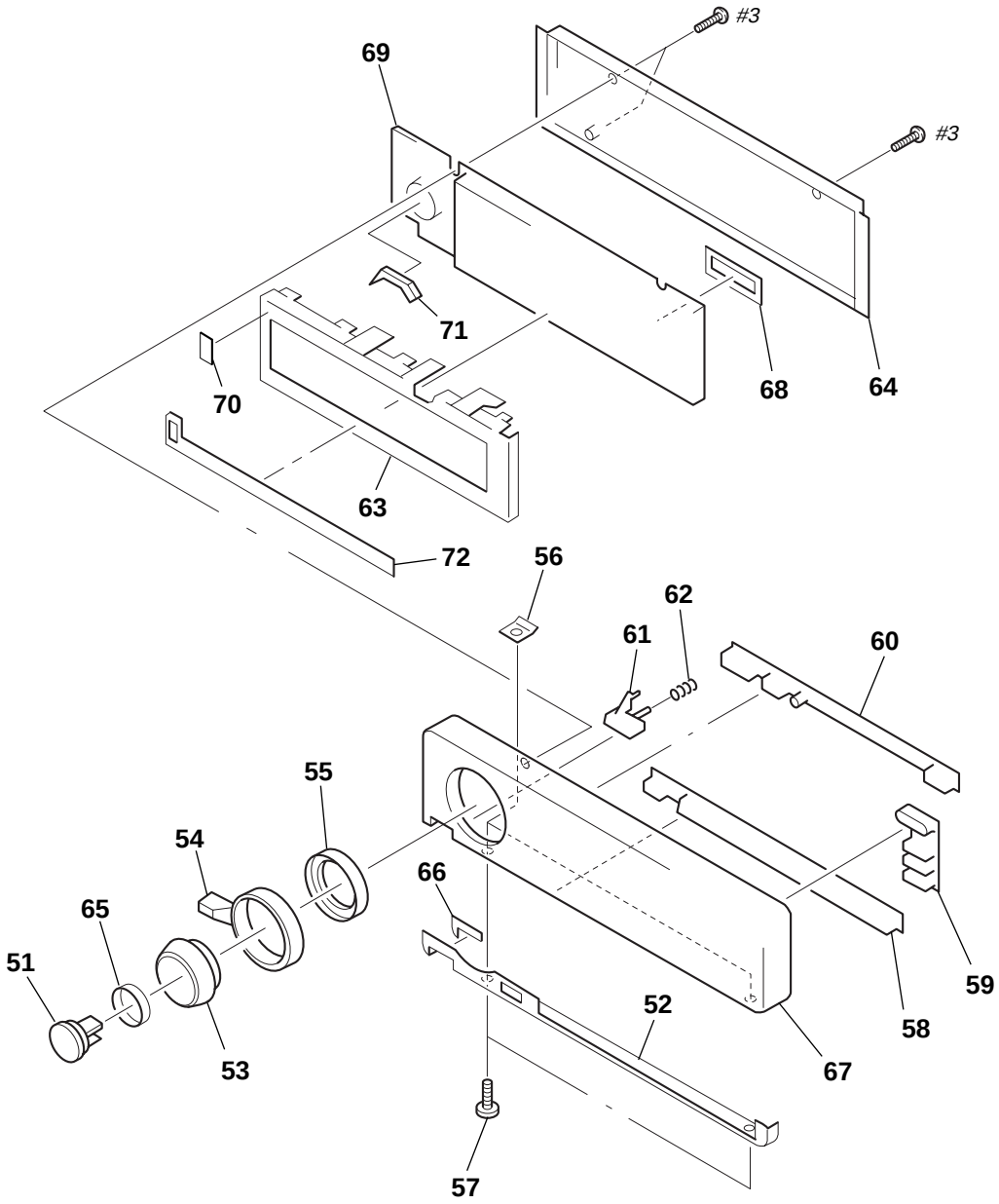
5-1. CASE SECTION



Ref. No.	Part No.	Description	Remark
1	3-906-712-11	SCREW (2.6X4) (CU), +PTT	
* 2	3-025-797-01	COVER (UPPER)	
3	1-783-269-11	CORD (WITH CONNECTOR) (POWER)	
* 4	A-3294-476-A	AUDIO BOARD, COMPLETE (US)	
* 4	A-3294-505-A	AUDIO BOARD, COMPLETE (E)	
* 5	3-025-798-01	BRACKET (MD)	
* 6	1-668-190-11	SENSOR BOARD	
7	3-321-813-01	WASHER, COTTER POLYETHYLENE	
8	3-026-749-01	GEAR (WORM)	
9	3-026-751-01	GEAR (C)	
10	3-026-750-01	GEAR (B)	
11	X-3375-557-1	MOTOR ASSY	
12	3-937-282-01	CASE (UPPER)	
* 13	3-938-138-01	SHEET (E)	

Ref. No.	Part No.	Description	Remark
14	3-915-923-01	SCREW, GROUND POINT	
* 15	1-670-686-11	EL BOARD	
16	3-937-812-01	CASE (LOWER)	
17	1-783-271-11	CORD (WITH CONNECTOR) (RCA) (BUS AUDIO IN, SUB OUT)	
18	1-783-271-21	CORD (WITH CONNECTOR) (RCA) (FRONT LINE OUT, REAR LINE OUT)	
* 19	3-025-805-01	PANEL, REAR	
20	1-783-270-21	CORD, POWER	
21	1-790-088-11	CORD (WITH CONNECTOR) (INVERTER)	
22	3-029-367-01	COVER (MD)	
23	3-029-989-01	CUSHION (COIL)	
F901	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) 10A	
M904	A-3301-552-A	MOTOR SUB ASSY (PANEL)	

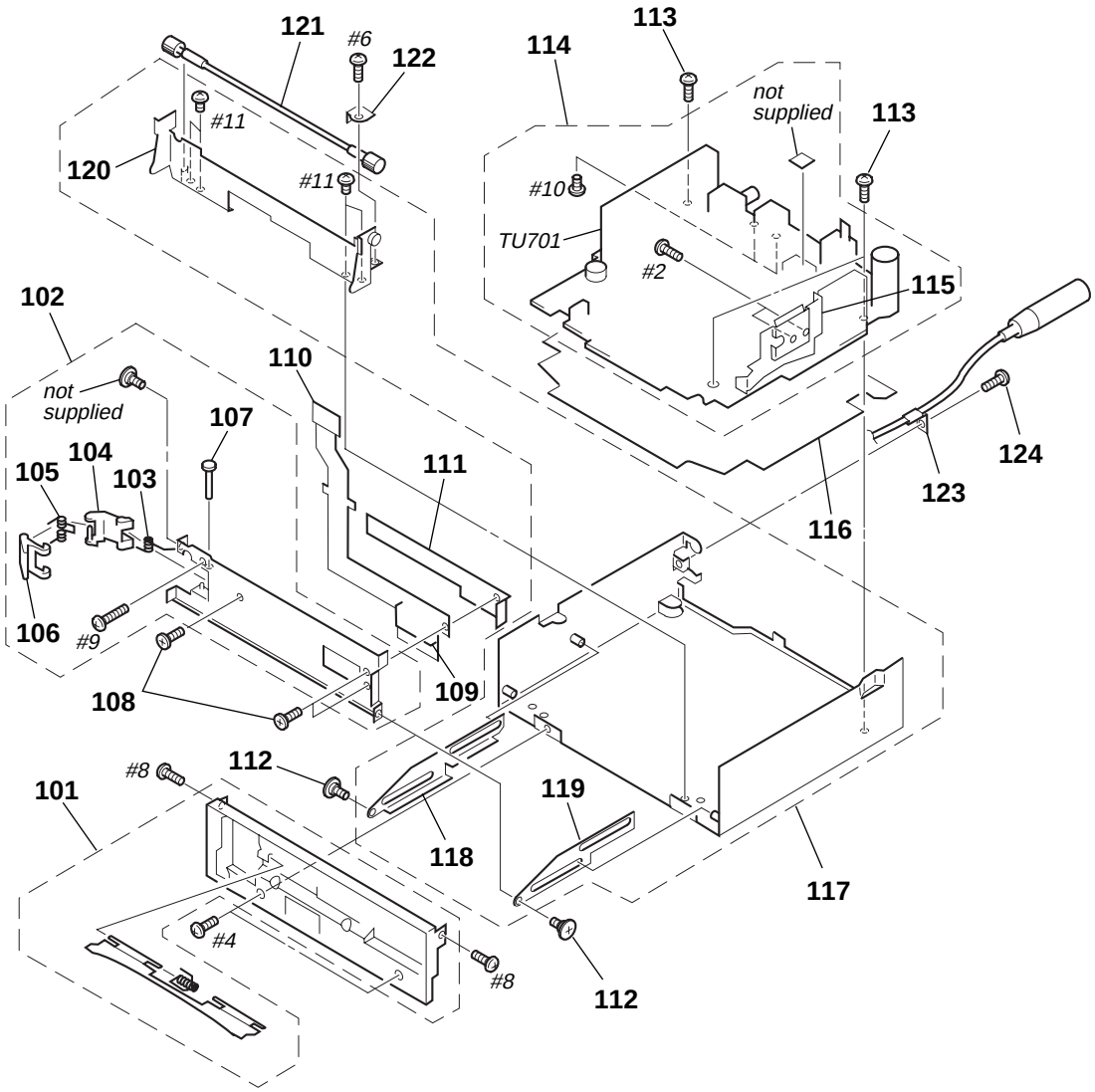
5-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	3-025-811-01	BUTTON (SOURCE)	
52	3-025-820-01	FRAME (FRONT), ORNAMENT	
53	3-025-793-01	KNOB (VOL)	
54	3-025-815-01	LEVER (SEEK/AMS)	
55	3-025-808-01	PLATE (SEEK/AMS), LIGHT GUIDE	
56	3-025-814-01	BRACKET (FRAME)	
57	3-349-825-61	SCREW	
58	3-025-817-01	BUTTON (10 KEY)	
59	3-025-818-01	BUTTON (FUNCTION)	
60	3-026-388-01	BUTTON (MODE)	
61	3-025-816-01	BUTTON (RELEASE)	
62	3-934-415-01	SPRING (RELEASE)	

Ref. No.	Part No.	Description	Remark
63	1-669-127-11	FLEXIBLE SW BOARD	
64	3-025-807-01	PANEL, FRONT BACK	
65	3-026-389-01	COVER (SOURCE)	
66	3-025-810-01	SHEET (FRONT), ADHESIVE	
67	X-3375-934-1	PANEL SUB ASSY, FRONT (US)	
67	X-3376-540-1	PANEL SUB ASSY, FRONT (E)	
68	3-938-230-01	SHEET (BLIND)	
69	1-803-056-11	LIQUID CRYSTAL MODULE	
* 70	3-029-132-01	SHEET (MODE)	
* 71	3-029-749-01	SHEET (SOURCE)	
* 72	3-030-385-01	SHEET (10 KEY)	

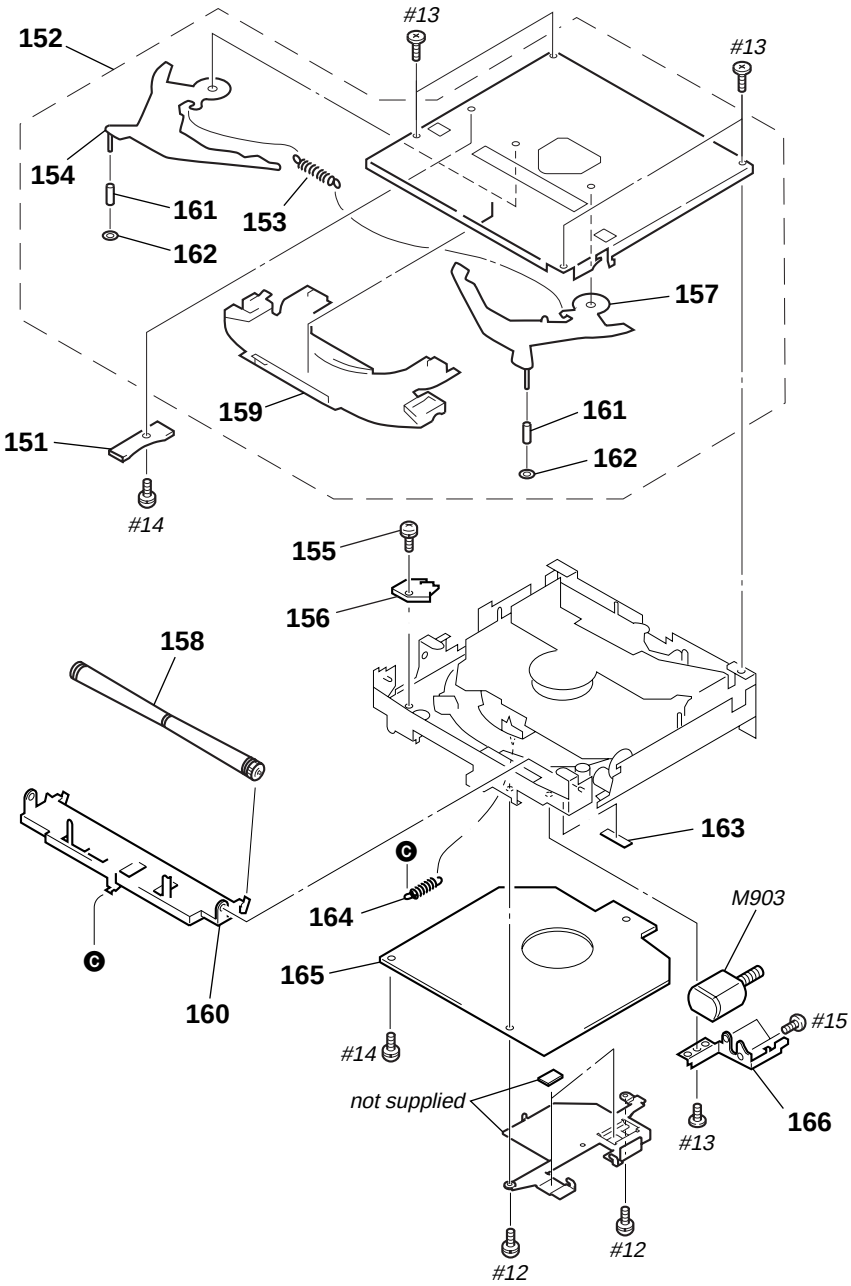
5-3. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
101	X-3375-552-1	PANEL ASSY, SUB	
102	X-3375-555-1	PANEL ASSY, BASE	
103	3-934-758-01	SPRING (A)	
104	3-934-756-01	ARM (LOCK)	
105	3-031-106-01	SPRING (B90)	
106	3-934-757-01	HOLDER (LOCK)	
107	3-934-755-01	SHAFT (LOCK)	
108	3-909-607-01	SCREW	
109	1-778-182-11	SOCKET, CONNECTOR 18P	
110	1-670-154-11	FLEXIBLE BOARD	
* 111	3-025-782-01	COVER (FLEXIBLE)	
112	3-025-783-01	SCREW (M1.7), STEP	
113	3-906-713-01	SCREW (+PTT), GROUND POINT	

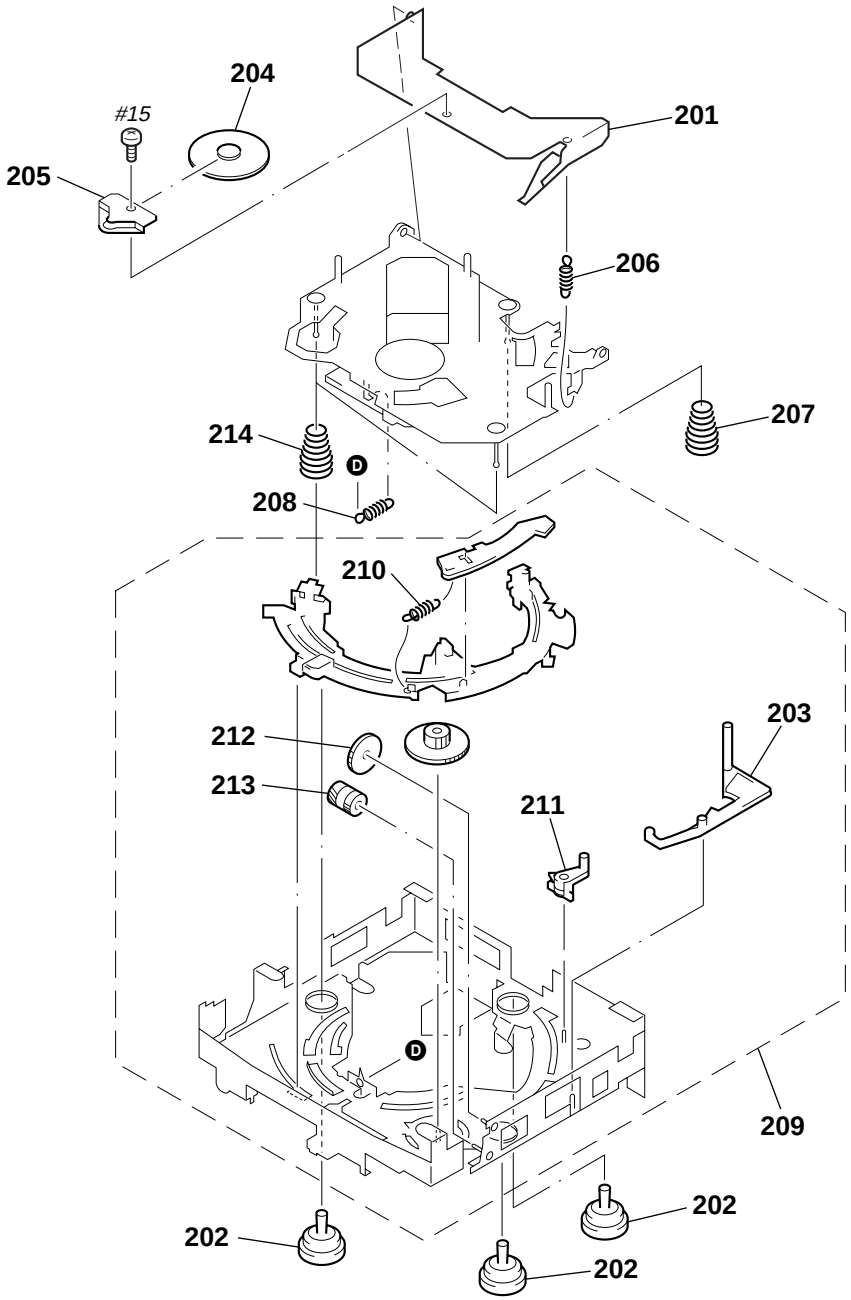
Ref. No.	Part No.	Description	Remark
* 114	A-3313-956-A	MAIN BOARD, COMPLETE (US)	
* 114	A-3317-107-A	MAIN BOARD, COMPLETE (E)	
* 115	X-3376-177-1	BRACKET (TRANSISTOR) ASSY	
* 116	3-026-748-01	SHEET (INSULATING 90)	
* 117	X-3375-551-1	CHASSIS ASSY	
118	X-3375-553-1	LEVER (L) ASSY	
119	X-3375-554-1	LEVER (R) ASSY	
120	X-3375-756-1	CHASSIS (FRONT) ASSY	
121	X-3375-556-1	SHAFT (PINION) ASSY	
* 122	3-025-792-01	BRACKET (SHAFT PINION)	
123	1-777-246-31	CORD (WITH CONNECTOR) (ANT)	
124	3-906-712-11	SCREW (2.6X6) (CU), +PTT	
TU701	A-3282-045-A	TUNER UNIT (TUX-012(E))	

5-4. CD MECHANISM SECTION (1)
(MG-363S-121)



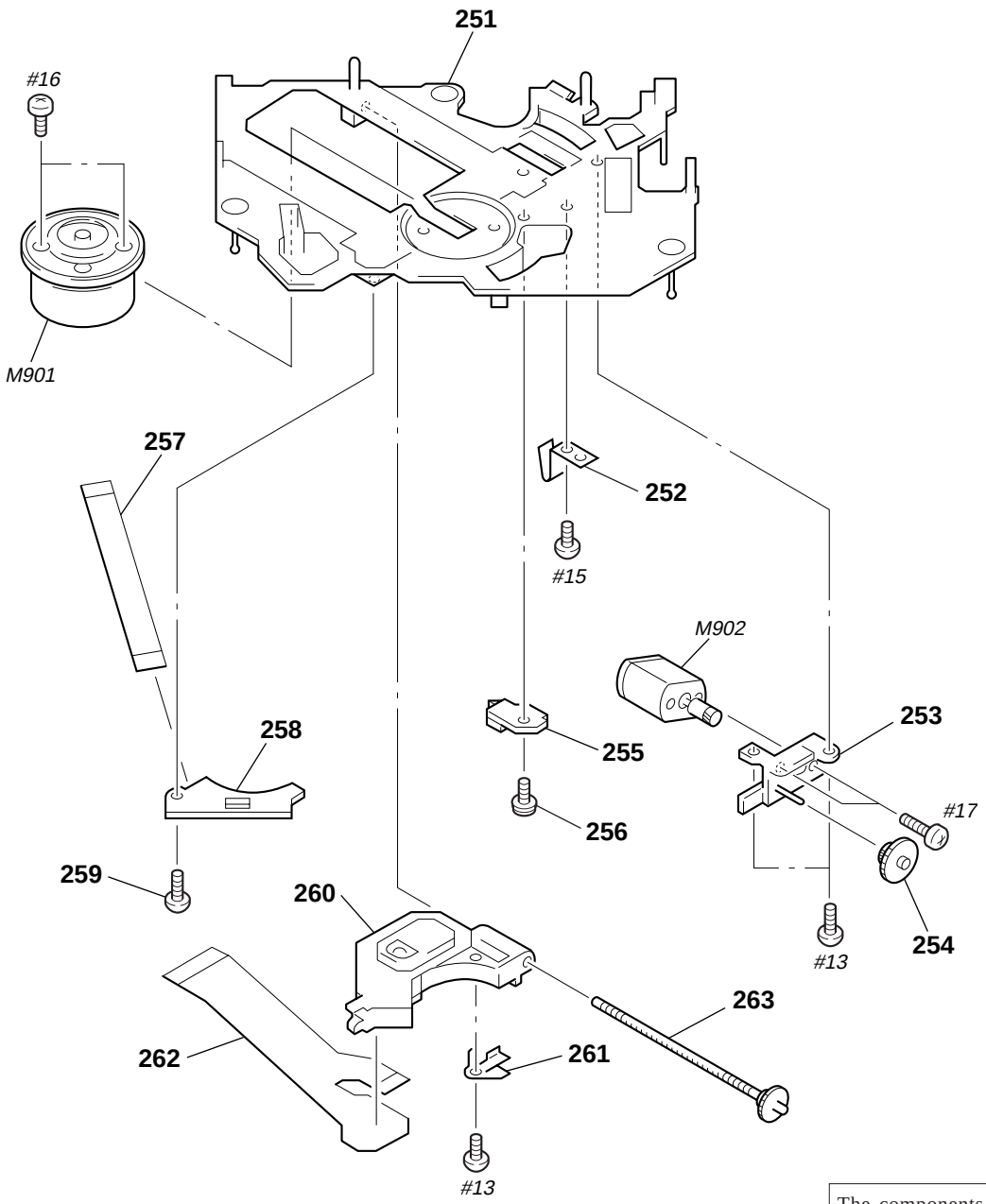
Ref. No.	Part No.	Description	Remark
* 151	1-659-836-11	DISC IN SW BOARD	
* 152	A-3291-816-B	CHASSIS (T) SUB ASSY	
153	3-931-909-01	SPRING (LR), TENSION	
154	X-3371-501-1	LEVER (L) ASSY	
155	3-338-737-01	SCREW (2X3), + PS	
* 156	1-659-837-11	LOAD SW BOARD	
157	X-3371-502-1	LEVER (R) ASSY	
158	A-3301-203-A	ROLLER ASSY	
159	3-931-908-01	GUIDE (DISC)	
160	3-931-902-04	ARM (ROLLER)	
161	3-936-756-01	ROLLER (D)	
162	3-321-393-01	WASHER, STOPPER	
* 163	3-939-139-01	SPACER	
164	3-931-916-01	SPRING (RA), TENSION	
* 165	A-3313-381-A	SERVO BOARD, COMPLETE	
* 166	3-007-530-01	BRACKET (MOTOR)	
M903	A-3291-676-A	MOTOR SUB ASSY, LOADING (LOADING)	

5-5. CD MECHANISM SECTION (2)
(MG-363S-121)



Ref. No.	Part No.	Description	Remark
201	3-931-893-01	ARM, CHUCKING	
202	3-931-897-01	DAMPER (T)	
203	3-931-879-02	LEVER (D)	
* 204	3-913-404-11	RETAINER (DISC)	
205	3-931-894-01	BRACKET (CP)	
206	3-931-895-01	SPRING (CH), TENSION	
207	3-931-898-01	SPRING (FL), COMPRESSION	
208	3-931-914-01	SPRING (ANGLE), TENSION	
* 209	A-3291-677-G	CHASSIS (M) ASSY	
210	3-931-883-01	SPRING (TR), TENSION	
211	3-931-881-01	LEVER (LOCK)	
212	3-931-882-02	GEAR (MDL)	
213	3-007-537-01	WHEEL (U), WORM	
214	3-931-898-11	SPRING (FL), COMPRESSION	

5-6. CD MECHANISM SECTION (3)
(MG-363S-121)



The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
* 251	X-3374-022-1	CHASSIS (OP) (O/S) ASSY	
252	3-931-829-01	SPRING (SL), PLATE	
253	X-3371-504-1	BASE (DRIVING) ASSY	
254	3-931-832-01	GEAR (SL MIDWAY)	
* 255	1-659-835-12	LIMIT SW BOARD	
256	3-338-737-01	SCREW (2X3), + PS	
257	1-659-880-11	MOTOR FLEXIBLE BOARD	
* 258	1-659-834-11	SUB BOARD	
259	3-909-607-01	SCREW	
⚠ 260	8-848-402-02	PICK-UP, OPTICAL KSS-520A/J2NP	
261	3-931-834-01	SPRING (FEED), PLATE	
262	1-659-881-11	PICK-UP FLEXIBLE BOARD	
263	A-3291-669-A	SHAFT (FEED) ASSY	
M901	X-3373-096-1	MOTOR ASSY (SPINDLE)	
M902	A-3301-107-A	MOTOR ASSY, SLED (SLED)	

AUDIO

SECTION 6
ELECTRICAL PARTS LIST

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : μ, for example:
  uA.. : μA.. uPA.. : μPA..
  uPB.. : μPB.. uPC.. : μPC.. uPD.. : μPD..
- CAPACITORS
  uF : μF
- COILS
  uH : μH

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	A-3294-476-A	AUDIO BOARD, COMPLETE (US)			
*	A-3294-505-A	AUDIO BOARD, COMPLETE (E)			
		**********			
		< CAPACITOR >			
C103	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C104	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C105	1-104-535-11	FILM CHIP	470PF	5%	50V
C106	1-104-535-11	FILM CHIP	470PF	5%	50V
C107	1-104-535-11	FILM CHIP	470PF	5%	50V
C108	1-104-535-11	FILM CHIP	470PF	5%	50V
C109	1-124-721-11	ELECT	10uF	20%	50V
C110	1-124-721-11	ELECT	10uF	20%	50V
C111	1-104-543-11	FILM CHIP	0.0022uF	5%	50V
C112	1-104-543-11	FILM CHIP	0.0022uF	5%	50V
C113	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C114	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C115	1-115-340-11	CERAMIC CHIP	0.22uF	10%	25V
C116	1-115-340-11	CERAMIC CHIP	0.22uF	10%	25V
C117	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C118	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C119	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C120	1-104-953-11	ELECT	47uF	20%	16V
C121	1-104-953-11	ELECT	47uF	20%	16V
C122	1-110-454-11	ELECT CHIP	10uF	20%	16V
C123	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C124	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C125	1-164-346-11	CERAMIC CHIP	1uF		16V
C126	1-164-732-11	CERAMIC	0.1uF	20%	50V
C127	1-164-732-11	CERAMIC	0.1uF	20%	50V
C128	1-164-732-11	CERAMIC	0.1uF	20%	50V
C129	1-164-732-11	CERAMIC	0.1uF	20%	50V
C130	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C131	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C132	1-164-732-11	CERAMIC	0.1uF	20%	50V
C133	1-164-732-11	CERAMIC	0.1uF	20%	50V
C134	1-164-732-11	CERAMIC	0.1uF	20%	50V
C135	1-164-732-11	CERAMIC	0.1uF	20%	50V
C142	1-124-721-11	ELECT	10uF	20%	50V
C143	1-124-721-11	ELECT	10uF	20%	50V
C144	1-124-721-11	ELECT	10uF	20%	50V
C145	1-124-721-11	ELECT	10uF	20%	50V
C146	1-124-721-11	ELECT	10uF	20%	50V
C147	1-124-721-11	ELECT	10uF	20%	50V
C148	1-124-721-11	ELECT	10uF	20%	50V
C149	1-124-721-11	ELECT	10uF	20%	50V
C150	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C151	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C152	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C153	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C154	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C155	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C156	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C157	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C158	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C159	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C162	1-124-698-11	ELECT	100uF	20%	25V
C163	1-124-698-11	ELECT	100uF	20%	25V
C164	1-115-651-11	ELECT	100uF	20%	16V
C165	1-115-651-11	ELECT	100uF	20%	16V
C166	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C167	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C168	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C169	1-164-505-11	CERAMIC	2.2uF		16V
C170	1-115-340-11	CERAMIC CHIP	0.22uF	10%	25V
C171	1-115-340-11	CERAMIC CHIP	0.22uF	10%	25V
		< CONNECTOR >			
CN101	1-784-608-11	PLUG, CONNECTOR 16P			
* CN102	1-506-946-11	PIN, CONNECTOR 4P			
* CN103	1-506-988-11	PIN, CONNECTOR (PC BOARD) 6P			
* CN104	1-506-946-11	PIN, CONNECTOR 4P			
* CN105	1-506-988-11	PIN, CONNECTOR (PC BOARD) 6P			
		< DIODE >			
D101	8-719-988-62	DIODE 1SS355			
D102	8-719-988-62	DIODE 1SS355			
D103	8-719-056-76	DIODE UDZ-TE-17-3.6B			
		< IC >			
IC101	8-759-711-85	IC NJM4580E-D			
IC102	8-752-082-16	IC CXA1946BR			
IC103	8-759-539-56	IC CS3310-KSR			
IC104	8-759-539-56	IC CS3310-KSR			
IC105	8-759-711-85	IC NJM4580E-D			
IC106	8-759-481-71	IC OP275GP			
IC107	8-759-481-71	IC OP275GP			
IC108	8-759-373-92	IC TA79005SB			
IC109	8-759-373-79	IC TA7805SB			

Ref. No.	Part No.	Description			Remark
		< TRANSISTOR >			
Q101	8-729-921-25	TRANSISTOR FMC2			
Q102	8-729-920-21	TRANSISTOR DTC314TKH04			
Q103	8-729-920-21	TRANSISTOR DTC314TKH04			
Q104	8-729-920-21	TRANSISTOR DTC314TKH04			
Q105	8-729-920-21	TRANSISTOR DTC314TKH04			
Q106	8-729-920-21	TRANSISTOR DTC314TKH04			
Q107	8-729-920-21	TRANSISTOR DTC314TKH04			
		< RESISTOR >			
R103	1-260-004-11	CARBON MELF	4.7K	2%	1/8W
R104	1-260-004-11	CARBON MELF	4.7K	2%	1/8W
R105	1-260-004-11	CARBON MELF	4.7K	2%	1/8W
R106	1-260-004-11	CARBON MELF	4.7K	2%	1/8W
R107	1-260-004-11	CARBON MELF	4.7K	2%	1/8W
R108	1-260-004-11	CARBON MELF	4.7K	2%	1/8W
R109	1-260-004-11	CARBON MELF	4.7K	2%	1/8W
R110	1-260-004-11	CARBON MELF	4.7K	2%	1/8W
R113	1-216-828-11	METAL CHIP	3.9K	5%	1/16W (E)
R114	1-216-828-11	METAL CHIP	3.9K	5%	1/16W (E)
R117	1-216-864-11	METAL CHIP	0	5%	1/16W
R118	1-216-821-11	METAL CHIP	1K	5%	1/16W (E)
R118	1-216-864-11	METAL CHIP	0	5%	1/16W (US)
R119	1-216-864-11	METAL CHIP	0	5%	1/16W
R120	1-216-821-11	METAL CHIP	1K	5%	1/16W (E)
R120	1-216-864-11	METAL CHIP	0	5%	1/16W (US)
R121	1-216-864-11	METAL CHIP	0	5%	1/16W
R122	1-216-864-11	METAL CHIP	0	5%	1/16W
R123	1-216-097-00	RES,CHIP	100K	5%	1/10W
R124	1-216-097-00	RES,CHIP	100K	5%	1/10W
R125	1-216-097-00	RES,CHIP	100K	5%	1/10W
R126	1-208-399-61	RES,CHIP	27	2%	1/8W
R127	1-208-399-61	RES,CHIP	27	2%	1/8W
R128	1-216-097-00	RES,CHIP	100K	5%	1/10W
R129	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R130	1-216-101-00	METAL CHIP	150K	5%	1/10W
R135	1-260-004-11	CARBON MELF	4.7K	2%	1/8W
R136	1-260-004-11	CARBON MELF	4.7K	2%	1/8W
R137	1-260-004-11	CARBON MELF	4.7K	2%	1/8W
R138	1-260-004-11	CARBON MELF	4.7K	2%	1/8W
R139	1-260-004-11	CARBON MELF	4.7K	2%	1/8W
R140	1-260-004-11	CARBON MELF	4.7K	2%	1/8W
R141	1-260-008-11	CARBON MELF	10K	2%	1/8W
R142	1-260-008-11	CARBON MELF	10K	2%	1/8W
R143	1-260-008-11	CARBON MELF	10K	2%	1/8W
R144	1-260-008-11	CARBON MELF	10K	2%	1/8W
R145	1-260-008-11	CARBON MELF	10K	2%	1/8W
R146	1-260-008-11	CARBON MELF	10K	2%	1/8W
R147	1-216-033-00	METAL CHIP	220	5%	1/10W
R148	1-216-033-00	METAL CHIP	220	5%	1/10W
R149	1-259-987-11	CARBON MELF	220	2%	1/8W
R150	1-259-987-11	CARBON MELF	220	2%	1/8W
R151	1-259-987-11	CARBON MELF	220	2%	1/8W
R152	1-259-987-11	CARBON MELF	220	2%	1/8W
R153	1-216-081-00	METAL CHIP	22K	5%	1/10W
R154	1-216-081-00	METAL CHIP	22K	5%	1/10W
R155	1-260-012-11	CARBON MELF	22K	2%	1/8W
R156	1-260-012-11	CARBON MELF	22K	2%	1/8W
R157	1-260-012-11	CARBON MELF	22K	2%	1/8W
R158	1-260-012-11	CARBON MELF	22K	2%	1/8W
R165	1-216-238-00	RES,CHIP	47K	2%	1/8W
R166	1-216-238-00	RES,CHIP	47K	2%	1/8W
R167	1-216-210-00	RES,CHIP	3.3K	2%	1/8W
R168	1-216-210-00	RES,CHIP	3.3K	2%	1/8W
R169	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R170	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R171	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R172	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R173	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R174	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
		< RELAY >			
RY101	1-755-061-11	RELAY			
**********					
*	1-659-836-11	DISC IN SW BOARD			
		**********			
		< SWITCH >			
SW1	1-572-288-11	SWITCH, PUSH (DISC IN)			
SW2	1-572-288-11	SWITCH, PUSH (SELF)			
**********					
*	1-670-686-11	EL BOARD			
		*********			
		< CAPACITOR >			
C551	1-124-233-11	ELECT	10uF	20%	16V
C552	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C553	1-126-925-11	ELECT	470uF	20%	10V
C554	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C555	1-126-962-11	ELECT	3.3uF	20%	50V
C556	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C557	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
		< CONNECTOR >			
* CN550	1-564-508-11	PLUG, CONNECTOR 5P			
CN551	1-564-505-11	PLUG, CONNECTOR 2P			

EL **LIMIT SW** **LOAD SW** **MAIN**

Ref. No.	Part No.	Description			Remark
		< DIODE >			
D550	8-719-978-24	DIODE DTZ-TT11-5.6A			
D551	8-719-977-21	DIODE DTZ8.2C			
D552	8-719-988-62	DIODE 1SS355			
D553	8-719-060-48	DIODE RB751V-40TE-17			
D554	8-719-978-24	DIODE DTZ-TT11-5.6A			
D555	8-719-056-83	DIODE UDZ-TE-17-6.8B			
		< IC >			
IC550	8-759-495-75	IC NJM317F			
		< TRANSISTOR >			
Q552	8-729-900-53	TRANSISTOR DTC114EK			
Q553	8-729-026-68	TRANSISTOR 2SD2525(TP)			
Q554	8-729-900-53	TRANSISTOR DTC114EK			
Q555	8-729-106-60	TRANSISTOR 2SB1115A			
Q556	8-729-046-09	TRANSISTOR 2SD1864-R			
Q557	8-729-021-94	FET 2SK1657-T1B			
		< RESISTOR >			
R552	1-216-214-00	RES,CHIP	4.7K	5%	1/8W
R553	1-216-214-00	RES,CHIP	4.7K	5%	1/8W
R555	1-216-158-00	RES,CHIP	22	5%	1/8W
R556	1-216-158-00	RES,CHIP	22	5%	1/8W
R557	1-216-003-11	RES,CHIP	12	5%	1/10W
R558	1-216-097-00	RES,CHIP	100K	5%	1/10W
R559	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R560	1-216-068-00	METAL CHIP	6.2K	5%	1/10W
R561	1-216-174-00	RES,CHIP	100	5%	1/8W
R562	1-216-097-00	RES,CHIP	100K	5%	1/10W
R563	1-216-097-00	RES,CHIP	100K	5%	1/10W
		< TRANSFORMER >			
T550	1-431-831-11	TRANSFORMER, OSCILLATION (EL)			
**********					
*	1-659-835-12	LIMIT SW BOARD			
		**********			
		< SWITCH >			
SW3	1-572-688-11	SWITCH, PUSH (1 KEY) (LIMIT)			
**********					
*	1-659-837-11	LOAD SW BOARD			
		**********			
		< SWITCH >			
SW4	1-572-288-11	SWITCH, PUSH (DOWN)			
**********					

Ref. No.	Part No.	Description			Remark
*	A-3313-956-A	MAIN BOARD, COMPLETE (US)			
*	A-3317-107-A	MAIN BOARD, COMPLETE (E)			
		**********			
*	X-3376-177-1	BRACKET (TRANSISTOR) ASSY			
	7-685-146-11	SCREW +P 3X8 TYPE2 NON-SLIT			
	7-685-792-09	SCREW +PTT 2.6X6 (S)			
		< BUZZER >			
BZ300	1-504-920-11	BUZZER			
		< CAPACITOR >			
C1	1-104-914-11	TANTAL. CHIP	22uF	20%	16V
C3	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C4	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C5	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C6	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C7	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C9	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C12	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C13	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C14	1-124-910-11	ELECT	47uF	20%	50V
C15	1-163-291-11	CERAMIC CHIP	15PF	5%	50V
C16	1-163-287-11	CERAMIC CHIP	10PF	5%	50V
C17	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C18	1-115-651-11	ELECT	100uF	20%	16V
C19	1-115-651-11	ELECT	100uF	20%	16V
C20	1-124-698-11	ELECT	100uF	20%	25V
C21	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C22	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C23	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C24	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C25	1-115-651-11	ELECT	100uF	20%	16V
C26	1-115-651-11	ELECT	100uF	20%	16V
C27	1-124-698-11	ELECT	100uF	20%	25V
C28	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C29	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C30	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C31	1-110-359-11	MYLAR	0.0047uF	5%	50V
C32	1-110-355-11	MYLAR	0.0022uF	5%	50V
C33	1-115-651-11	ELECT	100uF	20%	16V
C34	1-164-732-11	CERAMIC	0.1uF	20%	50V
C35	1-164-732-11	CERAMIC	0.1uF	20%	50V
C36	1-115-651-11	ELECT	100uF	20%	16V
C37	1-164-732-11	CERAMIC	0.1uF	20%	50V
C38	1-164-732-11	CERAMIC	0.1uF	20%	50V
C39	1-110-355-11	MYLAR	0.0022uF	5%	50V
C40	1-110-359-11	MYLAR	0.0047uF	5%	50V
C41	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C42	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C43	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C44	1-124-910-11	ELECT	47uF	20%	50V
C46	1-124-698-11	ELECT	100uF	20%	25V

Ref. No.	Part No.	Description			Remark
C47	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C48	1-124-910-11	ELECT	47uF	20%	50V
C49	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C50	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C51	1-164-732-11	CERAMIC	0.1uF	20%	50V
C52	1-124-710-11	ELECT	100uF	20%	35V
C53	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C54	1-164-732-11	CERAMIC	0.1uF	20%	50V
C55	1-124-710-11	ELECT	100uF	20%	35V
C56	1-115-651-11	ELECT	100uF	20%	16V
C57	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C58	1-115-581-11	TANTAL. CHIP	100uF	20%	16V
C59	1-115-581-11	TANTAL. CHIP	100uF	20%	16V
C60	1-164-346-11	CERAMIC CHIP	1uF		16V
C61	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C63	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C64	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C65	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C66	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C300	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C301	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C303	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C304	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C305	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C306	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C309	1-124-233-11	ELECT	10uF	20%	16V
C310	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C311	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C312	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C314	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C315	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C316	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C318	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C319	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C320	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C371	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C372	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C373	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C374	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C375	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C376	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C377	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C401	1-124-234-00	ELECT	22uF	20%	16V
C402	1-125-710-11	DOUBLE LAYERS	0.1F		5.5V
C403	1-128-526-11	ELECT	100uF	20%	16V
C404	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C405	1-124-234-00	ELECT	22uF	20%	16V
C406	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C407	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C408	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C409	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C410	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C411	1-115-866-11	ELECT	4.7uF	20%	35V
C412	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
C413	1-115-866-11	ELECT	4.7uF	20%	35V
C415	1-124-703-11	ELECT	2200uF	20%	25V
C417	1-104-951-11	ELECT	10uF	20%	16V
C418	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C420	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
C421	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
C422	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
C500	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C501	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C502	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C503	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C504	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C505	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C506	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C507	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C508	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C509	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C510	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C511	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C512	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C600	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C601	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C602	1-115-581-11	TANTAL. CHIP	100uF	20%	16V
C603	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C604	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C605	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C606	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C607	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C704	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C706	1-128-421-11	ELECT	47uF	20%	16V
C707	1-128-421-11	ELECT	47uF	20%	16V
C708	1-128-421-11	ELECT	47uF	20%	16V
C709	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C710	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C711	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C712	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C721	1-128-421-11	ELECT	47uF	20%	16V
C722	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C723	1-163-234-11	CERAMIC CHIP	20PF	5%	50V
C724	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C725	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C726	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C727	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C728	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C733	1-115-330-11	FILM	0.22uF	5%	50V
C771	1-135-091-00	TANTALUM CHIP	1uF	20%	16V
C774	1-128-436-11	ELECT	1uF	20%	50V
C775	1-104-553-11	FILM CHIP	0.015uF	5%	16V (E)
C775	1-104-555-11	FILM CHIP	0.022uF	5%	16V (US)
C776	1-164-346-11	CERAMIC CHIP	1uF		16V

MAIN

Ref. No.	Part No.	Description			Remark
C779	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C781	1-135-091-00	TANTALUM CHIP	1uF	20%	16V
C784	1-128-436-11	ELECT	1uF	20%	50V
C785	1-104-553-11	FILM CHIP	0.015uF	5%	16V (E)
C785	1-104-555-11	FILM CHIP	0.022uF	5%	16V (US)
C789	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C792	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C801	1-104-953-11	ELECT	47uF	20%	16V
C802	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C804	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C805	1-104-951-11	ELECT	10uF	20%	16V
C806	1-104-951-11	ELECT	10uF	20%	16V
C807	1-104-951-11	ELECT	10uF	20%	16V
C808	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C809	1-124-233-11	ELECT	10uF	20%	16V
C813	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
C828	1-124-233-11	ELECT	10uF	20%	16V
C851	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C852	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C853	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C854	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C855	1-135-213-21	TANTAL. CHIP	3.3uF	20%	25V
C856	1-163-245-11	CERAMIC CHIP	56PF	5%	50V
C857	1-163-986-00	CERAMIC CHIP	0.027uF	10%	25V
C858	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C859	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C860	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C861	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C862	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C863	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C864	1-126-572-11	ELECT	4.7uF	20%	35V
C865	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C866	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C867	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C868	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C891	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V
C893	1-115-185-11	CERAMIC CHIP	0.033uF	10%	50V
C894	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C895	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
		< FILTER >			
CF1	1-577-685-11	FILTER, CRYSTAL (16.9344MHz)			
		< CONNECTOR >			
CN1	1-764-617-12	PIN, CONNECTOR (PC BOARD) 30P			
CN2	1-695-546-11	PLUG, CONNECTOR (DIGITAL OUT)			
* CN3	1-506-611-11	PIN, CONNECTOR 8P			
CN4	1-784-609-11	RECEPTACLE, CONNECTOR 16P			
* CN5	1-506-985-11	PIN, CONNECTOR (PC BOARD) 3P			
* CN6	1-506-999-11	PIN, CONNECTOR (PC BOARD) 3P			
CN300	1-784-829-21	CONNECTOR, FPC 21P			

Ref. No.	Part No.	Description	Remark
* CN400	1-506-999-11	PIN, CONNECTOR (PC BOARD) 3P	
* CN401	1-506-986-11	PIN, CONNECTOR (PC BOARD) 4P	
* CN402	1-506-984-11	PIN, CONNECTOR (PC BOARD) 2P	
* CN403	1-750-141-11	PIN, CONNECTOR (PC BOARD) 6P	
CN600	1-770-626-21	PIN, CONNECTOR 9P	
* CN701	1-506-984-11	PIN, CONNECTOR (PC BOARD) 2P	
* CN801	1-506-998-11	PIN, CONNECTOR (PC BOARD) 2P	
CNJ301	1-580-907-31	PLUG, CONNECTOR (BUS CONTROL IN)	
		< JACK >	
CNJ300	1-778-831-11	JACK 7P (REMOTE IN)	
		< DISCHARGE GAP >	
CP701	1-519-504-11	GAP, DISCHARGE	
		< DIODE >	
D300	8-719-988-62	DIODE 1SS355	
D301	8-719-988-62	DIODE 1SS355	
D302	8-719-988-62	DIODE 1SS355	
D303	8-719-105-99	DIODE RD6.2M-B1	
D304	8-719-056-93	DIODE UDZ-TE-17-18B	
D305	8-719-056-93	DIODE UDZ-TE-17-18B	
D306	8-719-105-99	DIODE RD6.2M-B1	
D309	8-719-066-17	DIODE FTZ6.8E-T148	
D310	8-719-066-17	DIODE FTZ6.8E-T148	
D311	8-719-066-17	DIODE FTZ6.8E-T148	
D312	8-719-988-62	DIODE 1SS355	
D313	8-719-988-62	DIODE 1SS355	
D314	8-719-988-62	DIODE 1SS355	
D370	8-719-976-99	DIODE DTZ5.1B	
D371	8-719-976-99	DIODE DTZ5.1B	
D372	8-719-056-83	DIODE UDZ-TE-17-6.8B	
D373	8-719-056-83	DIODE UDZ-TE-17-6.8B	
D374	8-719-914-44	DIODE DAP202K	
D400	8-719-975-40	DIODE RB411D	
D401	8-719-988-62	DIODE 1SS355	
D402	8-719-056-88	DIODE UDZ-TE-17-11B	
D403	8-719-977-04	DIODE DTZ5.6C	
D404	8-719-056-88	DIODE UDZ-TE-17-11B	
D405	8-719-978-69	DIODE DTZ-TT11-16B	
D406	8-719-988-62	DIODE 1SS355	
D409	8-719-988-62	DIODE 1SS355	
D410	8-719-056-83	DIODE UDZ-TE-17-6.8B	
D412	8-719-056-83	DIODE UDZ-TE-17-6.8B	
D414	8-719-914-43	DIODE DAN202K	
D415	8-719-914-43	DIODE DAN202K	
D416	8-719-056-83	DIODE UDZ-TE-17-6.8B	
D417	8-719-313-73	DIODE SFPB-52	
D418	8-719-313-73	DIODE SFPB-52	
D419	8-719-028-74	DIODE NSQ03A04	
D422	8-719-056-83	DIODE UDZ-TE-17-6.8B	
D423	8-719-988-62	DIODE 1SS355	

Ref. No.	Part No.	Description	Remark
D424	8-719-914-43	DIODE DAN202K	
D600	8-719-914-43	DIODE DAN202K	
D604	8-719-988-62	DIODE 1SS355	
D605	8-719-988-62	DIODE 1SS355	
D791	8-719-422-12	DIODE MA8039	
D801	8-719-914-43	DIODE DAN202K	
D804	8-719-975-40	DIODE RB411D	
D900	8-719-988-62	DIODE 1SS355	
		< DC/DC CONVERTER >	
DD1	1-475-643-11	CONVERTER UNIT, DC/DC	
		< FERRITE BEAD >	
FB1	1-543-775-11	FERRITE, EMI (SMD)	
FB2	1-414-235-11	INDUCTOR, FERRITE BEAD	
FB3	1-500-239-21	FERRITE, EMI (SMD)	
FB4	1-500-445-21	FERRITE, EMI (SMD)	
FB5	1-500-445-21	FERRITE, EMI (SMD)	
FB6	1-500-445-21	FERRITE, EMI (SMD)	
FB7	1-500-445-21	FERRITE, EMI (SMD)	
FB401	1-500-445-21	FERRITE, EMI (SMD)	
FB402	1-500-445-21	FERRITE, EMI (SMD)	
FB403	1-500-445-21	FERRITE, EMI (SMD)	
FB404	1-500-445-21	FERRITE, EMI (SMD)	
FB405	1-500-445-21	FERRITE, EMI (SMD)	
FB406	1-500-445-21	FERRITE, EMI (SMD)	
FB407	1-500-445-21	FERRITE, EMI (SMD)	
		< IC >	
IC1	8-759-405-99	IC CXD8679AQ	
IC2	8-759-242-70	IC TC7WU04F	
IC3	8-759-253-90	IC PCM1702U-J	
IC4	8-759-253-90	IC PCM1702U-J	
IC5	8-759-064-92	IC NJM5532M-D	
IC6	8-759-064-92	IC NJM5532M-D	
IC7	8-759-242-70	IC TC7WU04F	
IC8	8-759-373-79	IC TA7805SB	
IC9	8-759-157-21	IC PQ05TZ11	
IC10	8-759-054-12	IC PQ09RA1	
IC11	8-759-157-21	IC PQ05TZ11	
IC300	8-759-542-47	IC MB90F574PFV-G-139-BND	
IC301	8-759-495-76	IC RN5VD33AA-TL	
IC302	8-759-449-89	IC BA8270F-E2	
IC303	8-759-253-82	IC AT24C16N-10SI-TR	
IC304	8-759-242-70	IC TC7WU04F	
IC400	8-759-443-41	IC RH5VL40AA-T1C	
IC500	8-759-337-66	IC HD6413002F16	
IC501	8-759-035-93	IC SC7S32F	
IC502	8-759-360-79	IC TC7W14F(TE12R)	
IC503	8-759-544-63	IC MBM29F800BA-70PFTN97	
IC504	8-759-536-92	IC KM684000BLGI-7T	
IC505	8-759-234-20	IC TC7S08F	
IC600	8-759-276-89	IC BA6285FP-E2	

Ref. No.	Part No.	Description	Remark
IC601	8-759-981-69	IC LM2904M	
IC602	8-759-363-82	IC PQ09TZ1U	
IC721	8-759-448-85	IC BU2624FV-E2	
IC771	8-759-064-92	IC NJM5532M-D	
IC801	8-759-363-82	IC PQ09TZ1U	
IC802	8-759-525-12	IC PQ1R47	
IC851	8-759-349-99	IC TA2051FN	
		< COIL >	
L1	1-410-208-21	INDUCTOR CHIP 22uH	
L2	1-414-400-11	INDUCTOR 22uH	
L3	1-414-398-11	INDUCTOR 10uH	
L5	1-412-056-11	INDUCTOR CHIP 4.7uH	
L300	1-414-400-11	INDUCTOR 22uH	
L401	1-414-712-21	INDUCTOR 1mH	
L500	1-414-400-11	INDUCTOR 22uH	
L501	1-414-400-11	INDUCTOR 22uH	
L502	1-414-400-11	INDUCTOR 22uH	
L721	1-414-400-11	INDUCTOR 22uH	
L851	1-414-400-11	INDUCTOR 22uH	
		< DIODE >	
LED300	8-719-033-13	LED CL-170Y-CD-T (OPEN END)	
LED302	8-719-033-13	LED CL-170Y-CD-T (OPEN END)	
		< TRAP COIL >	
LF771	1-416-717-11	COIL, TRAP	
LF781	1-416-717-11	COIL, TRAP	
		< IC LINK >	
PS1	1-533-674-11	LINK, CHIP IC (ICP-S0.5) 0.5A	
		< TRANSISTOR >	
Q300	8-729-900-53	TRANSISTOR DTC114EK	
Q301	8-729-900-53	TRANSISTOR DTC114EK	
Q303	8-729-900-53	TRANSISTOR DTC114EK	
Q304	8-729-026-53	TRANSISTOR 2SA1576A-T106-QR	
Q305	8-729-905-35	TRANSISTOR 2SC4081T106R	
Q308	8-729-027-23	TRANSISTOR DTA114EKA-T146	
Q309	8-729-027-23	TRANSISTOR DTA114EKA-T146	
Q310	8-729-900-53	TRANSISTOR DTC114EK	
Q311	8-729-900-53	TRANSISTOR DTC114EK	
Q400	8-729-044-95	TRANSISTOR 2SB1571-T1	
Q401	8-729-040-17	TRANSISTOR 2SD2164-K	
Q402	8-729-106-68	TRANSISTOR 2SD1615A-GP	
Q403	8-729-106-68	TRANSISTOR 2SD1615A-GP	
Q404	8-729-904-48	TRANSISTOR DTB113EK	
Q405	8-729-901-00	TRANSISTOR DTC124EK	
Q406	8-729-900-53	TRANSISTOR DTC114EK	
Q407	8-729-900-53	TRANSISTOR DTC114EK	
Q408	8-729-920-82	TRANSISTOR 2SB1188-QR	
Q411	8-729-900-53	TRANSISTOR DTC114EK	

MAIN

Ref. No.	Part No.	Description	Remark
Q415	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q416	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q417	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q601	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q603	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q605	8-729-900-53	TRANSISTOR DTC114EK	
Q702	8-729-901-00	TRANSISTOR DTC124EK	
Q703	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q721	8-729-921-25	TRANSISTOR FMC2	
Q722	8-729-021-94	FET 2SK1657-T1B	
Q771	8-729-920-21	TRANSISTOR DTC314TKH04	
Q781	8-729-920-21	TRANSISTOR DTC314TKH04	
Q791	8-729-921-25	TRANSISTOR FMC2	
Q801	8-729-044-95	TRANSISTOR 2SB1571-T1	
Q802	8-729-901-00	TRANSISTOR DTC124EK	
Q803	8-729-904-07	TRANSISTOR FMG2	
Q804	8-729-904-48	TRANSISTOR DTB113EK	
Q805	8-729-904-48	TRANSISTOR DTB113EK	
Q900	8-729-028-83	TRANSISTOR DTA124EUA-T106	

< RESISTOR >

Ref. No.	Part No.	Description			Remark
R1	1-259-991-11	CARBON MELF	470	2%	1/8W
R2	1-260-032-11	CARBON MELF	1M	2%	1/8W
R3	1-216-041-00	METAL CHIP	470	5%	1/10W
R4	1-216-041-00	METAL CHIP	470	5%	1/10W
R5	1-216-295-00	SHORT	0		
R6	1-216-041-00	METAL CHIP	470	5%	1/10W
R7	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R8	1-216-029-00	METAL CHIP	150	5%	1/10W
R9	1-216-049-11	RES,CHIP	1K	5%	1/10W
R11	1-216-295-00	SHORT	0		
R12	1-208-399-61	RES,CHIP	27	2%	1/8W
R13	1-208-399-61	RES,CHIP	27	2%	1/8W
R14	1-208-399-61	RES,CHIP	27	2%	1/8W
R15	1-208-399-61	RES,CHIP	27	2%	1/8W
R16	1-208-399-61	RES,CHIP	27	2%	1/8W
R17	1-208-399-61	RES,CHIP	27	2%	1/8W
R18	1-208-399-61	RES,CHIP	27	2%	1/8W
R19	1-208-399-61	RES,CHIP	27	2%	1/8W
R21	1-259-997-11	CARBON MELF	1.5K	2%	1/8W
R22	1-259-995-11	CARBON MELF	1K	2%	1/8W
R23	1-259-995-11	CARBON MELF	1K	2%	1/8W
R25	1-259-997-11	CARBON MELF	1.5K	2%	1/8W
R26	1-259-995-11	CARBON MELF	1K	2%	1/8W
R27	1-259-995-11	CARBON MELF	1K	2%	1/8W
R28	1-208-399-61	RES,CHIP	27	2%	1/8W
R29	1-208-399-61	RES,CHIP	27	2%	1/8W
R30	1-216-295-00	SHORT	0		
R31	1-216-065-00	RES,CHIP	4.7K	5%	1/10W
R32	1-260-005-11	CARBON MELF	5.6K	2%	1/8W
R33	1-260-016-11	CARBON MELF	47K	2%	1/8W
R34	1-260-005-11	CARBON MELF	5.6K	2%	1/8W
R35	1-260-016-11	CARBON MELF	47K	2%	1/8W

Ref. No.	Part No.	Description			Remark
R300	1-216-821-11	METAL CHIP	1K	5%	1/16W
R301	1-216-821-11	METAL CHIP	1K	5%	1/16W
R302	1-216-821-11	METAL CHIP	1K	5%	1/16W
R309	1-216-809-11	METAL CHIP	100	5%	1/16W
R310	1-216-049-11	RES,CHIP	1K	5%	1/10W
R311	1-216-049-11	RES,CHIP	1K	5%	1/10W
R312	1-216-049-11	RES,CHIP	1K	5%	1/10W
R313	1-216-845-11	METAL CHIP	100K	5%	1/16W
R316	1-216-845-11	METAL CHIP	100K	5%	1/16W
R320	1-216-845-11	METAL CHIP	100K	5%	1/16W
R321	1-216-845-11	METAL CHIP	100K	5%	1/16W
R322	1-216-845-11	METAL CHIP	100K	5%	1/16W
R323	1-216-097-00	RES,CHIP	100K	5%	1/10W
R324	1-216-833-11	METAL CHIP	10K	5%	1/16W
R325	1-216-113-00	METAL CHIP	470K	5%	1/10W
R326	1-216-017-00	RES,CHIP	47	5%	1/10W
R328	1-216-049-11	RES,CHIP	1K	5%	1/10W
R329	1-216-845-11	METAL CHIP	100K	5%	1/16W
R330	1-216-025-00	RES,CHIP	100	5%	1/10W
R331	1-216-025-00	RES,CHIP	100	5%	1/10W
R332	1-216-041-00	METAL CHIP	470	5%	1/10W
R333	1-216-097-00	RES,CHIP	100K	5%	1/10W
R334	1-208-806-11	RES,CHIP	10K	0.50%	1/10W
R335	1-208-806-11	RES,CHIP	10K	0.50%	1/10W
R336	1-216-097-00	RES,CHIP	100K	5%	1/10W
R337	1-216-097-00	RES,CHIP	100K	5%	1/10W
R338	1-216-025-00	RES,CHIP	100	5%	1/10W
R339	1-216-025-00	RES,CHIP	100	5%	1/10W
R340	1-216-049-11	RES,CHIP	1K	5%	1/10W
R341	1-216-049-11	RES,CHIP	1K	5%	1/10W
R342	1-216-049-11	RES,CHIP	1K	5%	1/10W
R343	1-216-049-11	RES,CHIP	1K	5%	1/10W
R344	1-216-049-11	RES,CHIP	1K	5%	1/10W
R345	1-216-049-11	RES,CHIP	1K	5%	1/10W
R346	1-216-049-11	RES,CHIP	1K	5%	1/10W
R347	1-216-025-00	RES,CHIP	100	5%	1/10W
R348	1-216-081-00	METAL CHIP	22K	5%	1/10W
R349	1-216-081-00	METAL CHIP	22K	5%	1/10W
R350	1-216-089-00	RES,CHIP	47K	5%	1/10W
R351	1-216-073-00	METAL CHIP	10K	5%	1/10W
R352	1-216-025-00	RES,CHIP	100	5%	1/10W
R353	1-216-025-00	RES,CHIP	100	5%	1/10W
R354	1-216-097-00	RES,CHIP	100K	5%	1/10W
R355	1-216-097-00	RES,CHIP	100K	5%	1/10W
R356	1-208-806-11	RES,CHIP	10K	0.50%	1/10W
R357	1-216-073-00	METAL CHIP	10K	5%	1/10W
R358	1-216-808-11	METAL CHIP	82	5%	1/16W
R359	1-216-845-11	METAL CHIP	100K	5%	1/16W
R360	1-216-097-00	RES,CHIP	100K	5%	1/10W
R361	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R362	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R363	1-216-025-00	RES,CHIP	100	5%	1/10W
R364	1-216-049-11	RES,CHIP	1K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R366	1-216-037-00	METAL CHIP	330	5%	1/10W
R371	1-216-049-11	RES,CHIP	1K	5%	1/10W
R372	1-216-049-11	RES,CHIP	1K	5%	1/10W
R373	1-216-023-00	METAL CHIP	82	5%	1/10W
R375	1-216-097-00	RES,CHIP	100K	5%	1/10W
R376	1-216-845-11	METAL CHIP	100K	5%	1/16W
R377	1-216-097-00	RES,CHIP	100K	5%	1/10W
R400	1-216-073-00	METAL CHIP	10K	5%	1/10W
R401	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R402	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R403	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R404	1-216-077-00	METAL CHIP	15K	5%	1/10W
R405	1-216-041-00	METAL CHIP	470	5%	1/10W
R406	1-216-041-00	METAL CHIP	470	5%	1/10W
R407	1-216-097-00	RES,CHIP	100K	5%	1/10W
R408	1-216-073-00	METAL CHIP	10K	5%	1/10W
R409	1-216-073-00	METAL CHIP	10K	5%	1/10W
R410	1-216-073-00	METAL CHIP	10K	5%	1/10W
R411	1-216-073-00	METAL CHIP	10K	5%	1/10W
R412	1-216-089-00	RES,CHIP	47K	5%	1/10W
R415	1-216-097-00	RES,CHIP	100K	5%	1/10W
R416	1-216-085-00	METAL CHIP	33K	5%	1/10W
R417	1-216-097-00	RES,CHIP	100K	5%	1/10W
R418	1-216-097-00	RES,CHIP	100K	5%	1/10W
R419	1-216-073-00	METAL CHIP	10K	5%	1/10W
R420	1-216-089-00	RES,CHIP	47K	5%	1/10W
R421	1-216-081-00	METAL CHIP	22K	5%	1/10W
R422	1-216-089-00	RES,CHIP	47K	5%	1/10W
R423	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R424	1-216-073-00	METAL CHIP	10K	5%	1/10W
R425	1-216-081-00	METAL CHIP	22K	5%	1/10W
R426	1-216-089-00	RES,CHIP	47K	5%	1/10W
R427	1-216-089-00	RES,CHIP	47K	5%	1/10W
R428	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R429	1-216-073-00	METAL CHIP	10K	5%	1/10W
R430	1-216-073-00	METAL CHIP	10K	5%	1/10W
R431	1-216-097-00	RES,CHIP	100K	5%	1/10W
R432	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R433	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R500	1-216-097-00	RES,CHIP	100K	5%	1/10W
R501	1-216-097-00	RES,CHIP	100K	5%	1/10W
R503	1-216-097-00	RES,CHIP	100K	5%	1/10W
R504	1-216-097-00	RES,CHIP	100K	5%	1/10W
R506	1-216-049-11	RES,CHIP	1K	5%	1/10W
R508	1-216-097-00	RES,CHIP	100K	5%	1/10W
R509	1-216-097-00	RES,CHIP	100K	5%	1/10W
R510	1-216-097-00	RES,CHIP	100K	5%	1/10W
R511	1-216-097-00	RES,CHIP	100K	5%	1/10W
R512	1-216-097-00	RES,CHIP	100K	5%	1/10W
R515	1-216-295-00	SHORT	0		
R517	1-216-041-00	METAL CHIP	470	5%	1/10W
R518	1-216-041-00	METAL CHIP	470	5%	1/10W
R519	1-216-049-11	RES,CHIP	1K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R520	1-216-295-00	SHORT	0		
R521	1-216-845-11	METAL CHIP	100K	5%	1/16W
R522	1-216-817-11	METAL CHIP	470	5%	1/16W
R523	1-216-097-00	RES,CHIP	100K	5%	1/10W
R601	1-216-025-00	RES,CHIP	100	5%	1/10W
R602	1-216-033-00	METAL CHIP	220	5%	1/10W
R603	1-216-097-00	RES,CHIP	100K	5%	1/10W
R606	1-216-097-00	RES,CHIP	100K	5%	1/10W
R607	1-216-073-00	METAL CHIP	10K	5%	1/10W
R608	1-216-081-00	METAL CHIP	22K	5%	1/10W
R609	1-216-103-00	METAL CHIP	180K	5%	1/10W
R610	1-216-073-00	METAL CHIP	10K	5%	1/10W
R611	1-217-671-11	METAL CHIP	1	5%	1/10W
R612	1-216-097-00	RES,CHIP	100K	5%	1/10W
R701	1-216-295-00	SHORT	0		
R702	1-216-833-11	METAL CHIP	10K	5%	1/16W
R703	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R704	1-216-815-11	METAL CHIP	330	5%	1/16W
R705	1-216-049-11	RES,CHIP	1K	5%	1/10W
R706	1-216-833-11	METAL CHIP	10K	5%	1/16W
R707	1-216-841-11	METAL CHIP	47K	5%	1/16W
R710	1-216-833-11	METAL CHIP	10K	5%	1/16W
R711	1-216-837-11	METAL CHIP	22K	5%	1/16W
R713	1-216-864-11	METAL CHIP	0	5%	1/16W
R721	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R722	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R725	1-216-073-00	METAL CHIP	10K	5%	1/10W
R727	1-216-821-11	METAL CHIP	1K	5%	1/16W
R732	1-216-073-00	METAL CHIP	10K	5%	1/10W
R734	1-216-817-11	METAL CHIP	470	5%	1/16W
R735	1-216-817-11	METAL CHIP	470	5%	1/16W
R736	1-216-817-11	METAL CHIP	470	5%	1/16W
R761	1-216-296-00	SHORT	0		
R763	1-216-296-00	SHORT	0		
R771	1-216-212-00	RES,CHIP	3.9K	2%	1/8W (US)
R771	1-216-216-00	RES,CHIP	5.6K	2%	1/8W (E)
R772	1-216-208-00	RES,CHIP	2.7K	2%	1/8W (E)
R772	1-216-210-00	RES,CHIP	3.3K	2%	1/8W (US)
R773	1-216-296-00	SHORT	0		
R775	1-216-246-00	RES,CHIP	100K	2%	1/8W
R776	1-208-476-11	RES,CHIP	390	2%	1/8W (E)
R776	1-208-478-11	RES,CHIP	470	2%	1/8W (US)
R777	1-208-486-61	RES,CHIP	1K	2%	1/8W
R781	1-216-212-00	RES,CHIP	3.9K	2%	1/8W (US)
R781	1-216-216-00	RES,CHIP	5.6K	2%	1/8W (E)

MAIN **SENSOR** **SERVO**

Ref. No.	Part No.	Description			Remark
R782	1-216-208-00	RES,CHIP	2.7K	2%	1/8W (E)
R782	1-216-210-00	RES,CHIP	3.3K	2%	1/8W (US)
R783	1-216-296-00	SHORT	0		
R785	1-216-246-00	RES,CHIP	100K	2%	1/8W
R786	1-208-476-11	RES,CHIP	390	2%	1/8W (E)
R786	1-208-478-11	RES,CHIP	470	2%	1/8W (US)
R787	1-208-486-61	RES,CHIP	1K	2%	1/8W
R791	1-216-295-00	SHORT	0		
R792	1-216-295-00	SHORT	0		
R794	1-216-846-11	METAL CHIP	120K	5%	1/16W (E)
R794	1-216-864-11	METAL CHIP	0	5%	1/16W
R801	1-216-073-00	METAL CHIP	10K	5%	1/10W
R802	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R803	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R804	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R805	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R806	1-216-845-11	METAL CHIP	100K	5%	1/16W
R824	1-216-864-11	METAL CHIP	0	5%	1/16W
R825	1-216-845-11	METAL CHIP	100K	5%	1/16W
R851	1-216-834-11	METAL CHIP	12K	5%	1/16W
R852	1-216-833-11	METAL CHIP	10K	5%	1/16W
R853	1-216-813-11	METAL CHIP	220	5%	1/16W
R854	1-216-839-11	METAL CHIP	33K	5%	1/16W
R855	1-216-810-11	METAL CHIP	120	5%	1/16W
R856	1-216-834-11	METAL CHIP	12K	5%	1/16W
R857	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R858	1-216-095-00	METAL CHIP	82K	5%	1/10W
R893	1-216-097-00	RES,CHIP	100K	5%	1/10W
R894	1-216-065-00	RES,CHIP	4.7K	5%	1/10W
R895	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R896	1-216-295-00	SHORT	0		
R897	1-216-295-00	SHORT	0		
R999	1-216-864-11	METAL CHIP	0	5%	1/16W
		< NETWORK RESISTOR >			
RB300	1-233-412-11	RES, CHIP NETWORK	1.0K	(3216)	
RB501	1-216-182-00	RES, CHIP NETWORK	220	(3216)	
RB502	1-216-182-00	RES, CHIP NETWORK	220	(3216)	
RB503	1-216-182-00	RES, CHIP NETWORK	220	(3216)	
RB504	1-216-182-00	RES, CHIP NETWORK	220	(3216)	
RB505	1-216-182-00	RES, CHIP NETWORK	220	(3216)	
RB506	1-216-182-00	RES, CHIP NETWORK	220	(3216)	
RB507	1-216-182-00	RES, CHIP NETWORK	220	(3216)	
RB508	1-216-182-00	RES, CHIP NETWORK	220	(3216)	
RB509	1-216-182-00	RES, CHIP NETWORK	220	(3216)	
RB510	1-216-182-00	RES, CHIP NETWORK	220	(3216)	
RB511	1-216-182-00	RES, CHIP NETWORK	220	(3216)	
RB512	1-216-182-00	RES, CHIP NETWORK	220	(3216)	
RB513	1-216-182-00	RES, CHIP NETWORK	220	(3216)	
RB514	1-216-182-00	RES, CHIP NETWORK	220	(3216)	
RB515	1-216-182-00	RES, CHIP NETWORK	220	(3216)	
		< THERMISTOR (POSITIVE) >			
TH401	1-809-148-11	THERMISTOR, POSITIVE			
TH402	1-809-148-11	THERMISTOR, POSITIVE			
		< TUNER >			
TU701	A-3282-045-A	TUNER UNIT (TUX-012(E))			
		< VIBRATOR >			
X1	1-767-338-11	VIBRATOR, CRYSTAL (11.2896MHz)			
X300	1-781-002-11	VIBRATOR, CERAMIC (3.68MHz)			
X301	1-579-886-21	VIBRATOR, CRYSTAL (32.768kHz)			
X500	1-767-426-21	VIBRATOR, CERAMIC (14.74MHz)			
X721	1-567-848-11	VIBRATOR, CRYSTAL (7.2MHz)			
**********					
*	1-668-190-11	SENSOR BOARD **********			
		< CAPACITOR >			
C621	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
		< CONNECTOR >			
CN620	1-770-626-21	PIN, CONNECTOR 9P			
* CN621	1-691-741-21	PIN, CONNECTOR (PC BOARD) 2P			
		< RESISTOR >			
R620	1-216-097-00	RES,CHIP	100K	5%	1/10W
R621	1-216-097-00	RES,CHIP	100K	5%	1/10W
R622	1-216-097-00	RES,CHIP	100K	5%	1/10W
R623	1-216-097-00	RES,CHIP	100K	5%	1/10W
		< SWITCH >			
S620	1-572-688-11	SWITCH, PUSH (1 KEY) (OPEN END)			
S621	1-572-688-11	SWITCH, PUSH (1 KEY) (CLOSE END)			
S622	1-572-688-11	SWITCH, PUSH (1 KEY) (10 DEG)			
S623	1-572-688-11	SWITCH, PUSH (1 KEY) (20 DEG)			
S630	1-692-431-21	SWITCH, TACTILE (RESET)			
**********					
*	A-3313-381-A	SERVO BOARD, COMPLETE **********			
		< CAPACITOR >			
C1	1-113-642-11	TANTAL. CHIP	47uF	20%	10V
C2	1-115-581-11	TANTAL. CHIP	100uF	20%	16V
C3	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C4	1-110-456-11	ELECT CHIP	47uF	20%	16V
C101	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C102	1-115-581-11	TANTAL. CHIP	100uF	20%	16V
C105	1-115-581-11	TANTAL. CHIP	100uF	20%	16V
C106	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V

Ref. No.	Part No.	Description			Remark
C107	1-115-581-11	TANTAL. CHIP	100uF	20%	16V
C108	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C109	1-115-581-11	TANTAL. CHIP	100uF	20%	16V
C110	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C111	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C112	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C113	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C203	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C204	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C205	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C206	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C207	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C208	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C209	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C301	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C303	1-164-336-11	CERAMIC CHIP	0.33uF		25V
C304	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C305	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C306	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C307	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C308	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C309	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V
C310	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C311	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C312	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C313	1-163-259-11	CERAMIC CHIP	220PF	5%	50V
C501	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C502	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V
C503	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C504	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C505	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C506	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C507	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C508	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V
C509	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C510	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C511	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C513	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C514	1-113-642-11	TANTAL. CHIP	47uF	20%	10V
C527	1-113-642-11	TANTAL. CHIP	47uF	20%	10V
C551	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C601	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C603	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C605	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
		< CONNECTOR >			
CN1	1-764-616-12	HOUSING, CONNECTOR (PC BOARD) 30P			
CN2	1-766-491-11	CONNECTOR, FPC 17P			
CN4	1-770-347-21	CONNECTOR, FPC 6P			
CN5	1-569-775-21	PIN, CONNECTOR 5P			
		< IC >			
IC1	8-752-069-29	IC CXA1791N			

Ref. No.	Part No.	Description			Remark
IC2	8-752-374-12	IC CXD2522R-T6			
IC4	8-759-427-15	IC MB814400C-70PFTN			
IC5	8-752-889-54	IC CXP84640-011Q			
IC6	8-759-823-87	IC LB1638M			
IC7	8-759-370-18	IC BA6797FP-E2			
IC501	8-752-378-67	IC CXD2548R			
IC551	8-759-428-57	IC LC89170M-TLM			
IC601	8-759-335-52	IC BA6195FP-YT2			
		< COIL >			
L103	1-412-060-11	INDUCTOR CHIP 22uH			
L501	1-412-060-11	INDUCTOR CHIP 22uH			
L503	1-412-060-11	INDUCTOR CHIP 22uH			
		< TRANSISTOR >			
Q1	8-729-901-05	TRANSISTOR DTA124EK			
Q2	8-729-011-95	TRANSISTOR RN-2426			
Q3	8-729-141-48	TRANSISTOR 2SB624-BV345			
Q4	8-729-901-00	TRANSISTOR DTC124EK			
Q5	8-729-901-00	TRANSISTOR DTC124EK			
		< RESISTOR >			
R101	1-216-295-00	SHORT	0		
R102	1-216-081-00	METAL CHIP	22K	5%	1/10W
R103	1-216-081-00	METAL CHIP	22K	5%	1/10W
R104	1-216-103-00	METAL CHIP	180K	5%	1/10W
R105	1-216-103-00	METAL CHIP	180K	5%	1/10W
R106	1-216-001-00	METAL CHIP	10	5%	1/10W
R108	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R109	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R110	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R111	1-216-065-00	RES,CHIP	4.7K	5%	1/10W
R112	1-216-065-00	RES,CHIP	4.7K	5%	1/10W
R113	1-216-073-00	METAL CHIP	10K	5%	1/10W
R114	1-216-097-00	RES,CHIP	100K	5%	1/10W
R115	1-216-073-00	METAL CHIP	10K	5%	1/10W
R140	1-216-073-00	METAL CHIP	10K	5%	1/10W
R141	1-216-081-00	METAL CHIP	22K	5%	1/10W
R142	1-216-089-00	RES,CHIP	47K	5%	1/10W
R143	1-216-093-00	METAL CHIP	68K	5%	1/10W
R203	1-216-097-00	RES,CHIP	100K	5%	1/10W
R209	1-216-089-00	RES,CHIP	47K	5%	1/10W
R210	1-216-841-11	METAL CHIP	47K	5%	1/16W
R213	1-216-049-11	RES,CHIP	1K	5%	1/10W
R214	1-216-864-11	METAL CHIP	0	5%	1/16W
R217	1-216-081-00	METAL CHIP	22K	5%	1/10W
R218	1-216-089-00	RES,CHIP	47K	5%	1/10W
R219	1-216-097-00	RES,CHIP	100K	5%	1/10W
R220	1-216-097-00	RES,CHIP	100K	5%	1/10W
R222	1-216-845-11	METAL CHIP	100K	5%	1/16W
R223	1-216-841-11	METAL CHIP	47K	5%	1/16W
R224	1-216-841-11	METAL CHIP	47K	5%	1/16W
R301	1-216-025-00	RES,CHIP	100	5%	1/10W

SERVO **SUB**

Ref. No.	Part No.	Description			Remark
R302	1-216-037-00	METAL CHIP	330	5%	1/10W
R303	1-216-308-00	METAL CHIP	4.7	5%	1/10W
R304	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R305	1-216-675-11	METAL CHIP	10K	0.5%	1/10W
R306	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R307	1-216-675-11	METAL CHIP	10K	0.5%	1/10W
R308	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R309	1-216-675-11	METAL CHIP	10K	0.5%	1/10W
R310	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R311	1-216-675-11	METAL CHIP	10K	0.5%	1/10W
R312	1-216-085-00	METAL CHIP	33K	5%	1/10W
R313	1-216-089-00	RES,CHIP	47K	5%	1/10W
R314	1-216-103-00	METAL CHIP	180K	5%	1/10W
R315	1-216-085-00	METAL CHIP	33K	5%	1/10W
R316	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R317	1-216-675-11	METAL CHIP	10K	0.5%	1/10W
R318	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R319	1-216-675-11	METAL CHIP	10K	0.5%	1/10W
R320	1-216-097-00	RES,CHIP	100K	5%	1/10W
R333	1-216-864-11	METAL CHIP	0	5%	1/16W
R334	1-216-089-00	RES,CHIP	47K	5%	1/10W
R398	1-216-296-00	SHORT	0		
R399	1-216-296-00	SHORT	0		
R501	1-216-097-00	RES,CHIP	100K	5%	1/10W
R502	1-216-073-00	METAL CHIP	10K	5%	1/10W
R503	1-216-121-00	RES,CHIP	1M	5%	1/10W
R504	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R505	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R506	1-216-073-00	METAL CHIP	10K	5%	1/10W
R507	1-216-125-00	METAL CHIP	1.5M	5%	1/10W
R508	1-216-105-00	RES,CHIP	220K	5%	1/10W
R509	1-216-113-00	METAL CHIP	470K	5%	1/10W
R510	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R511	1-216-073-00	METAL CHIP	10K	5%	1/10W
R519	1-216-081-00	METAL CHIP	22K	5%	1/10W
R524	1-216-813-11	METAL CHIP	220	5%	1/16W
R525	1-216-813-11	METAL CHIP	220	5%	1/16W
R526	1-216-813-11	METAL CHIP	220	5%	1/16W
R527	1-216-813-11	METAL CHIP	220	5%	1/16W
R528	1-216-296-00	SHORT	0		
R529	1-216-073-00	METAL CHIP	10K	5%	1/10W
R530	1-216-295-00	SHORT	0		
R531	1-216-065-00	RES,CHIP	4.7K	5%	1/10W
R532	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R533	1-216-065-00	RES,CHIP	4.7K	5%	1/10W
R551	1-216-089-00	RES,CHIP	47K	5%	1/10W
R552	1-216-809-11	METAL CHIP	100	5%	1/16W
R553	1-216-809-11	METAL CHIP	100	5%	1/16W
R554	1-216-809-11	METAL CHIP	100	5%	1/16W
R555	1-216-809-11	METAL CHIP	100	5%	1/16W
R601	1-216-081-00	METAL CHIP	22K	5%	1/10W
R602	1-216-295-00	SHORT	0		
R603	1-216-085-00	METAL CHIP	33K	5%	1/10W
R604	1-216-097-00	RES,CHIP	100K	5%	1/10W
R605	1-216-081-00	METAL CHIP	22K	5%	1/10W

< VIBRATOR >

X1	1-760-365-11	VIBRATOR, CERAMIC (10MHz)

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*	1-659-834-11	SUB BOARD
		**********

< CONNECTOR >

CN1	1-770-347-21	CONNECTOR, FPC 6P

****

MISCELLANEOUS
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3	1-783-269-11	CORD (WITH CONNECTOR) (POWER)
17	1-783-271-11	CORD (WITH CONNECTOR) (RCA) (BUS AUDIO IN, SUB OUT)
18	1-783-271-21	CORD (WITH CONNECTOR) (RCA) (FRONT LINE OUT, REAR LINE OUT)
20	1-783-270-21	CORD, POWER
21	1-790-088-11	CORD (WITH CONNECTOR) (INVERTER)
63	1-669-127-11	FLEXIBLE SW BOARD
69	1-803-056-11	LIQUID CRYSTAL MODULE
109	1-778-182-11	SOCKET, CONNECTOR 18P
110	1-670-154-11	FLEXIBLE BOARD
123	1-777-246-31	CORD (WITH CONNECTOR) (ANT)
257	1-659-880-11	MOTOR FLEXIBLE BOARD
⚠260	8-848-402-02	PICK-UP, OPTICAL KSS-520A/J2NP
262	1-659-881-11	PICK-UP FLEXIBLE BOARD
F901	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) 10A
M901	X-3373-096-1	MOTOR ASSY (SPINDLE)
M902	A-3301-107-A	MOTOR ASSY, SLED (SLED)
M903	A-3291-676-A	MOTOR SUB ASSY, LOADING (LOADING)
M904	A-3301-552-A	MOTOR SUB ASSY (PANEL)

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ACCESSORIES & PACKING MATERIALS
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	1-473-967-31	COMMANDER, ROTARY (RM-X90)
	1-475-642-31	REMOTE COMMANDER (RM-X9)
	3-012-266-01	LID, BATTERY CASE (for RM-X9)
	3-339-410-11	COVER (2), PIN JACK
	3-862-328-11	MANUAL, INSTRUCTION (ENGLISH) (US)
	3-862-328-21	MANUAL, INSTRUCTION (ENGLISH,SPANISH, CHINESE) (E)
	3-864-350-11	MANUAL, INSTRUCTION, INSTALL (ENGLISH) (US)
	3-864-350-21	MANUAL, INSTRUCTION, INSTALL (ENGLISH, SPANISH,CHINESE) (E)
	3-864-494-11	MANUAL, FITTING INSTRUCTION (ENGLISH, SPANISH,CHINESE) (for RM-X9) (E)
	X-3375-799-1	CASE ASSY (90)

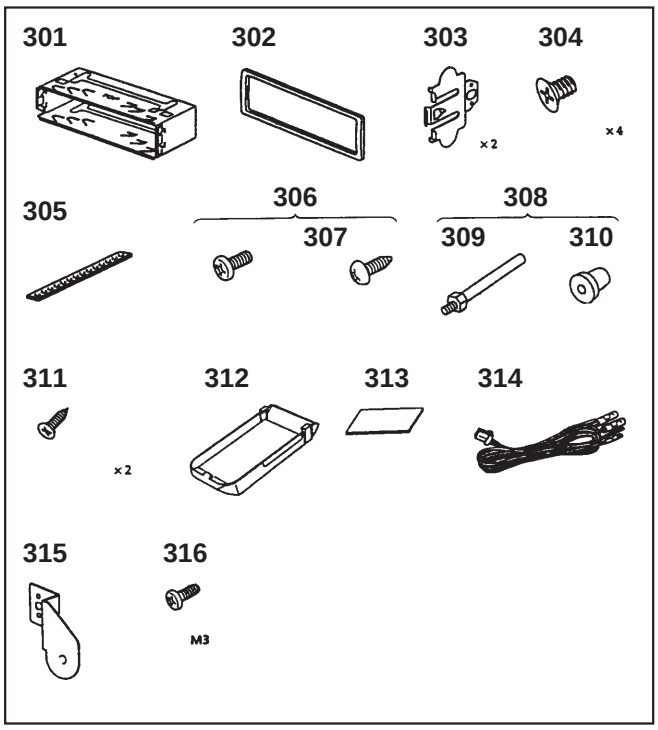
****

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
		**********	
		HARDWARE LIST	
		**********	
#1	7-685-851-04	SCREW +BVTT 2X4 (S)	
#2	7-685-792-09	SCREW +PTT 2.6X6 (S)	
#3	7-685-105-19	SCREW +P 2X8 TYPE2 NON-SLIT	
#4	7-685-790-09	SCREW +PTT 2.6X4 (S)	
#5	7-621-772-20	SCREW +B 2X5	
#6	7-627-553-28	SCREW, PRECISION +P 2X2.5	
#7	7-624-102-04	STOP RING 1.5, TYPE -E	
#8	7-621-772-10	SCREW +B 2X4	
#9	7-627-553-68	SCREW, PRECISION +P 2X6	
#10	7-685-146-11	SCREW +P 3X8 TYPE2 NON-SLIT	
#11	7-621-775-08	SCREW +B 2.6X3	
#12	7-628-253-15	SCREW +PS 2X5	
#13	7-627-553-37	SCREW, PRECISION +P 2X3 TYPE3	
#14	7-628-253-00	SCREW +PS 2X4	
#15	7-627-553-17	SCREW, PRECISION +P 2X2 TYPE3	
#16	7-627-000-00	SCREW, PRECISION +P 1.7X2.2 TYPE3	
#17	7-627-850-28	SCREW, PRECISION +P 1.4X3	
#18	7-621-710-26	SET-SCREW, SLOT 2X3 FLAT POINT	

****

Ref. No.	Part No.	Description	Remark
		PARTS FOR INSTALLATION AND CONNECTIONS	
		**********	
301	3-009-613-21	FRAME	
302	3-025-812-01	COLLAR (90)	
303	3-027-138-01	SPRING, FITTING	
304	3-934-325-01	SCREW, +K (5X8) TAPPING	
305	3-924-961-01	SUPPORT (ND), FITTING (US)	
306	X-3368-725-1	SCREW ASSY, FITTING (US)	
307	7-682-560-04	SCREW +P 4X6 (US)	
308	X-3366-405-1	SCREW ASSY (EXP), FITTING (E)	
309	3-386-828-01	SCREW, FITTING (E)	
310	3-349-410-01	BUSHING (E)	
311	7-685-248-14	SCREW +KTP 3X12 TYPE2 NON-SLIT	
312	3-012-265-01	HOLDER	
313	3-937-921-01	TAPE (HOLDER)	
314	1-783-269-11	CORD (WITH CONNECTOR) (POWER)	
315	3-028-789-01	COVER (LIGHT)	
316	7-682-546-09	SCREW +B 3X5	



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